EPSON
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Advanced Printer Driver Ver.5

Printer Manual

APD Overview

Descriptions of the APD features.

How to Use the Basic Functions

Descriptions of the basic features of APD5.

Advanced Method

Descriptions of the various features of APD5.

Log Output

Descriptions of log file output.

Restrictions

Description of restrictions on use the APD.

M00062200-2EN
Rev. B

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For Safety

Key to Symbols

The symbols in this manual are identified by their level of importance, as defined below. Read the following carefully before handling the product.

	Provides information that must be observed to avoid damage to your equipment or a malfunction.
	Provides important information and useful tips.

Restriction of Use

When this product is used for applications requiring high reliability/safety such as transportation devices related to aviation, rail, marine, automotive etc.; disaster prevention devices; various safety devices etc; or functional/precision devices etc, you should use this product only after giving consideration to including fail-safes and redundancies into your design to maintain safety and total system reliability. Because this product was not intended for use in applications requiring extremely high reliability/safety such as aerospace equipment, main communication equipment, nuclear power control equipment, or medical equipment related to direct medical care etc, please make your own judgment on this product's suitability after a full evaluation.

About this Manual

Aim of the Manual

This manual is aimed to provide all the necessary information for development engineers to develop, design, and install POS system, or to develop and design printer applications.

Manual Content

The manual is made up of the following sections:

Chapter 1 APD Overview

Chapter 2 How to Use the Basic Functions

Chapter 3 Advanced Method

Chapter 4 Log Output

Chapter 5 Restrictions

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APD Overview

Introduction

The Advanced Printer Driver Version 5 (APD5) is a printer driver for EPSON TM printers.
In addition, for installation for POS, the status of your TM printer can be monitored by the Status API.

- Screens in Windows 7 are used for the descriptions in this manual.
  When using other OS, please follow the interface of the OS.
- Some functions cannot be used depending on the model of TM printer.
  Please refer to "Printer Specifications" for detail.

Manual organization

Install Manual

Descriptions of the procedures from installing the APD to performing test print, adding printer drivers, and the silent install which is an automated APD installation.

TM Printer Manual

This manual. Descriptions of how to use the APD and its functions.

Status API Manual

Descriptions of how to get the status of the TM printer from the user application by using the Status API.

Printer Specification

Description of the features of printer drivers (available APD functions and Status API).
Prepared per different model.

Inquiries

See the Epson homepage.

- For customers in North America, go to the following web site:
  http://www.epsonexpert.com/ and follow the on-screen instructions.
- For customers in other countries, go to the following web site:
  https://download.epson-biz.com/?service=pos

ESC/POS commands

ESC/POS commands are not open to the public. Ask your sales representative for details.

APD5 Features

Easy

- Allows you to print from commercially available applications, since the APD is a Windows driver.
- Allows you to send the paper cut command to the TM printer. (p.18)
- Allows you to control the cash drawer and buzzer.(p.20)
- Allows you to print logos. (p.23)
- Allows you to print a Barcode(p.38) and 2D-Code(p.44) with the fonts built in the APD.
- Allows you to select from 24 languages for text on screen and help dialog. (p.92)
- WHQL certified driver. (Supported depending on the combinations of model and interface.)

Fast

- It is possible to start printing faster than APD4. Printing speed differs depending on TM printer and interface. Please refer to the TM printer's manual for detail.
- Even with a serial interface, speed printing is possible by registering the logo (p.29) or using the printer's device fonts (p.73).

Convenience

- It can print coupons even when a print application does not provide the function. (p.55)
- The electronic journal function allows print data to be stored in an electronic file. (Supported depending on the model.)
  The stored data can be printed and searched for by date. (p.51)
- Using the paper saver feature, the front and back space of print data can be minimized. (p.93)

Expandability

- Printer sharing is supported. Allows you to share TM printer with other computers on a network. (Printer sharing through a print server is not supported.)
- In an application, the function of control font and controlA font that the customer can embed ESC/POS commands to a control character are provided.

Programming

- Win32/.NET environment is supported. See the "Status API Manual" to find out which development language is supported.

- Allows you to check the status of the device (TM printer) by using the Status API.

> - In Terminal Service / Citrix XenApp environment, Status API and PRINTER_INFO_2 cannot be used.
> - When using the Status API, specify Epson Port Driver (ESDPRTxxx) to the port. The ports other than this are not available.

- It can be printed as any name from your application by specifying the device font. (p.73)
- Character size, font, and other settings that affect the print result can be adjusted with minimal changes to your print application. (p.88)
- Allows you to use ESC/POS commands control. (p.70)

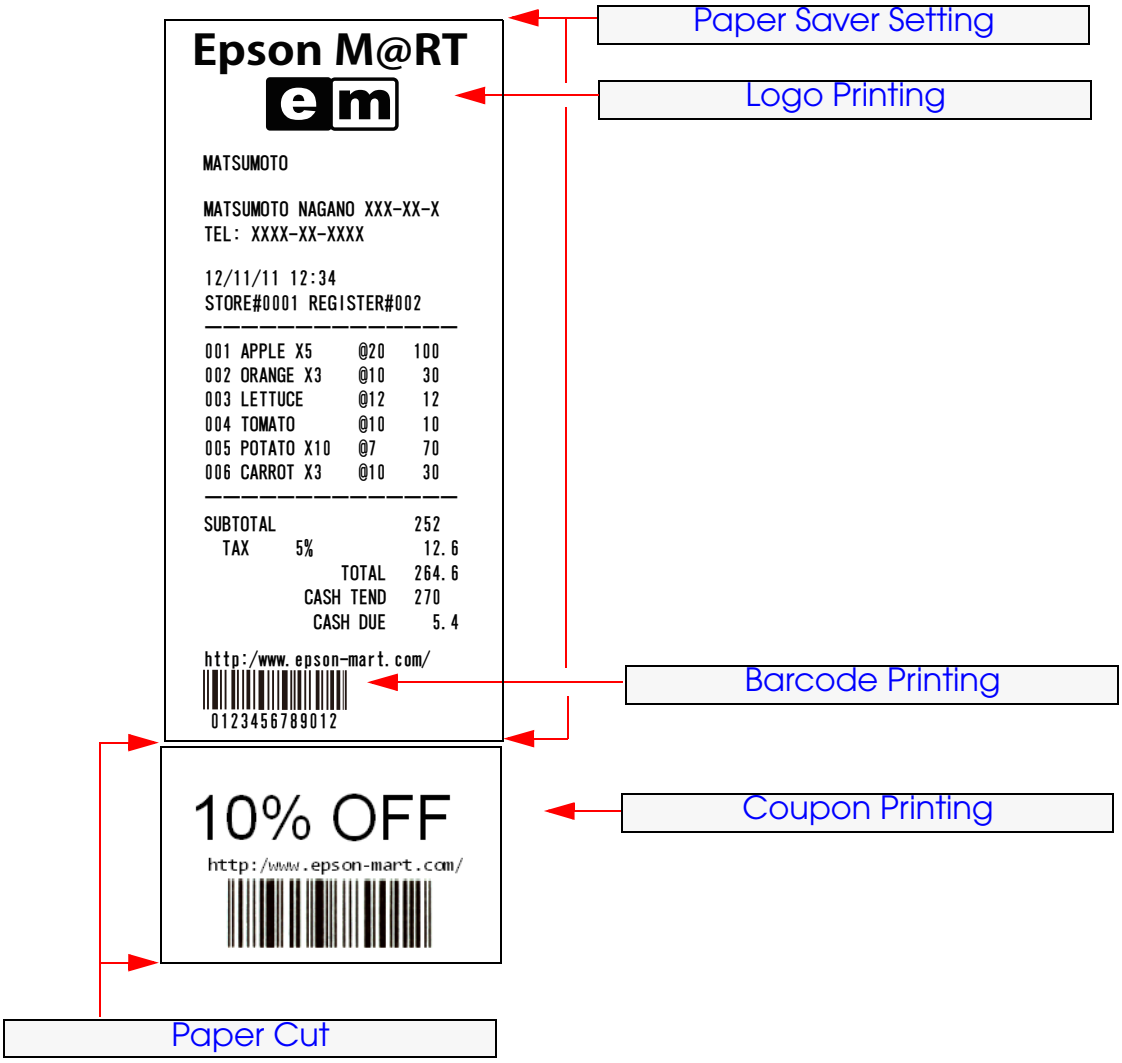
Installation

- IP address of the TM printer can be set.
- It can reflect the APD5 environment that has been setup to other computers. It copies the logo data registered in the driver. (Silent Installation)
- Plug-and-Play is supported.

Compatibility

- It can coexist with the APD4 driver of customer display. It does not support Y connection.
- It can coexist with the OPOS driver. However, the combinations of APD and OPOS version are limited.
- It can coexist with APD4.54 and later. It cannot coexist with the APD older than APD4.

Printing Example



How to Use the Basic Functions

This chapter explains how to use the functions provided by the APD.

- Some functions cannot be used depending on the model of TM printer.
- Administrator privilege is required for settings the printer driver.

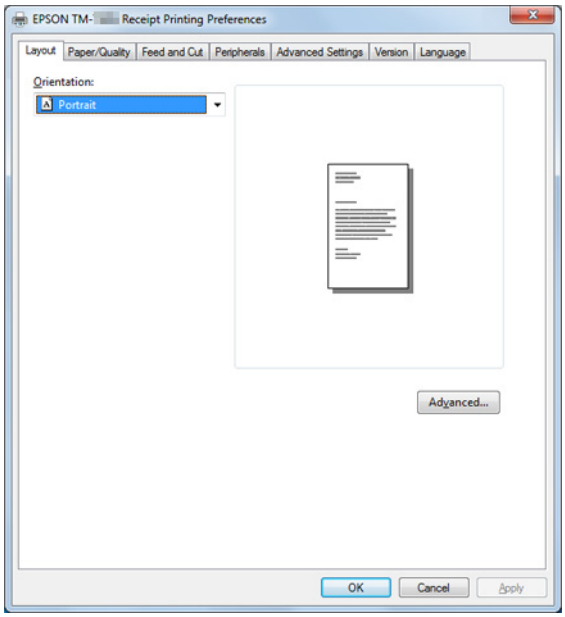
Display of APD5 Setting Screen

Launch the setting screen of APD5. Follow the steps below.

It can be also launched from the print screen of application.
Please refer to your application manual for detail.

1 Select (Start)-(Devices and Printers).
Printers and devices registered in PC are displayed.

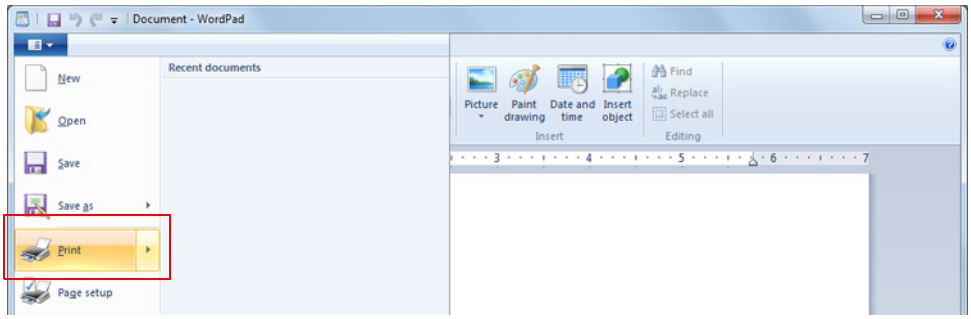
2 Right click the TM printer and click (Printing preferences).
The [Printing Preferences] screen appears.



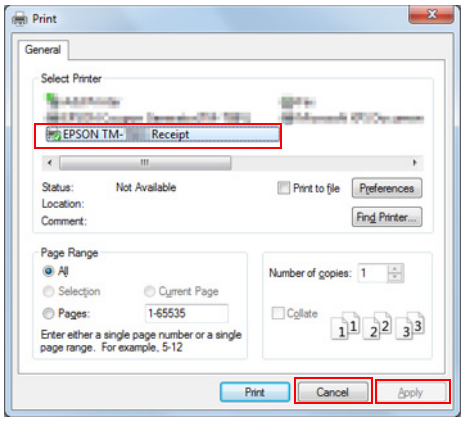
Application Printer Settings

The following explains the initial printer settings from the Windows application to the TM printer. Set the printer model and paper from the application you are to use.
This is an example using WordPad. Run [All Programs] - [Accessories] - [WordPad] from the [Start] menu.

1 Select (File) - (Print...) to display the print dialog box.

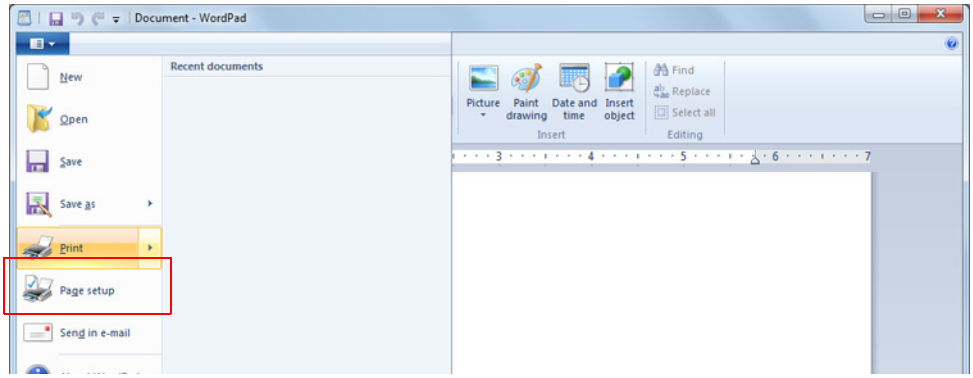


2 Select the printer driver you are to use. Press the (Apply) button.

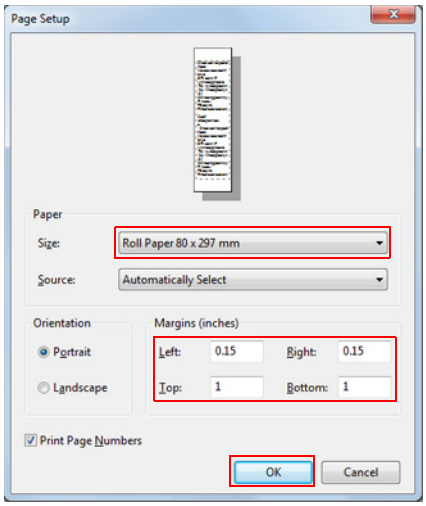


3 Press the (Cancel) button.
Return to WordPad screen.

4 Select (File) - (Page Setup) to display the Page Setup dialog box.



5 Select the paper you are to use. At this point the Page Setup illustration changes to roll paper. Set the margins, and then press the (OK) button.



The paper width selected with Page Setup is applied to WordPad.

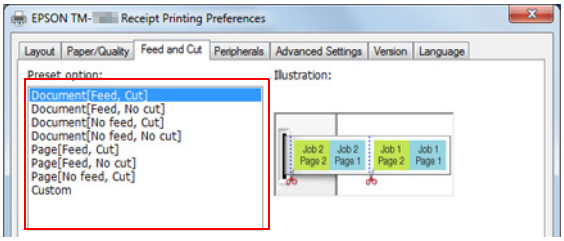
Paper Feed and Cut Setting

It sets the timing of auto-cut and paper feed before and after the printing. Follow the steps below.

1 Select (Feed and Cut) tab from printing preferences.

2 Select a cut and paper feed method displayed in the (Preset option) list and click (OK).

Select using the illustration of paper feed and cut displayed in [Illustration] for your reference.



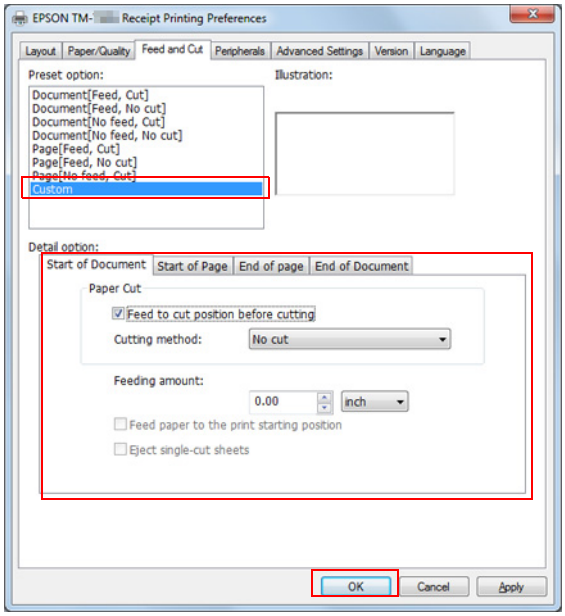
- Feed: Paper is fed to the auto-cutter's cutting position after printing a document.
- No Feed: Paper is not fed after printing a document. Print data may be cut if it is cut in the condition.

Customization of Paper Feed and Cut

Customization is possible, when no preset function is desired, such as specifying the amount of paper feed and modifying the timing control.

Follow the steps below.

1 Select "Custom" from the list of (Preset option).



2 Select the control timing from (Detail option) tab to setup the action. Settings are described below.

Item		Description
Timing	Start of Document	At the beginning of document printing.
	Start of Page	At the beginning of each page in the document.
	End of Page	At the end of each page in the document
	End of Document	At the end of document printing
Action	Feed to cut position before cutting	When checked, paper is fed to the cutting position of auto-cutter.
	Cutting method	Auto-cutter will not act when "No cut" is selected.
	Feeding amount	The amount of paper feed can be specified by inches.
	Feed paper to the print starting position	When checked, paper is fed to the head position.
	Eject single-cut sheets	When checked, single cut sheets are printed.

3 Click (OK).

Peripheral Device's Action Settings

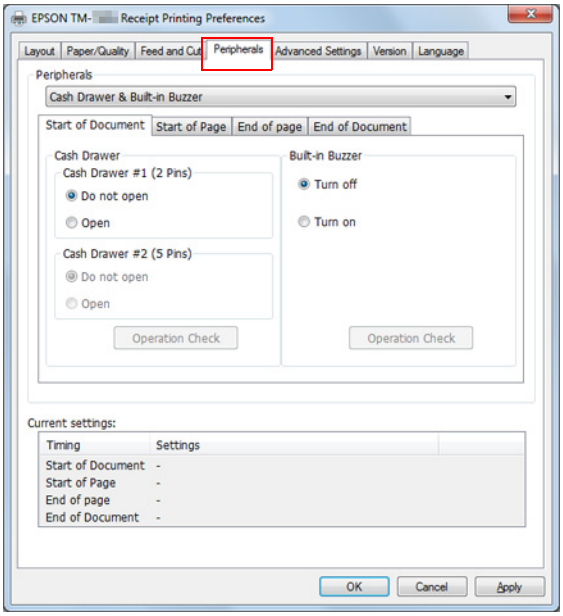
It sets peripheral device's actions such as the cash drawer and buzzer.

> Option buzzer can be operated only with the APD5 Utility.
> Please refer to "Buzzer Settings" on page 78 for detail.

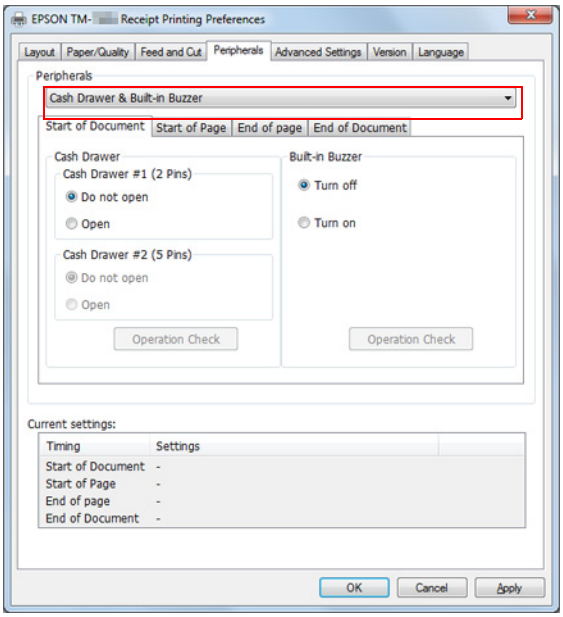
How to Setup

Follow the steps below.

1 Select (Peripherals) tab from Printing Preferences.

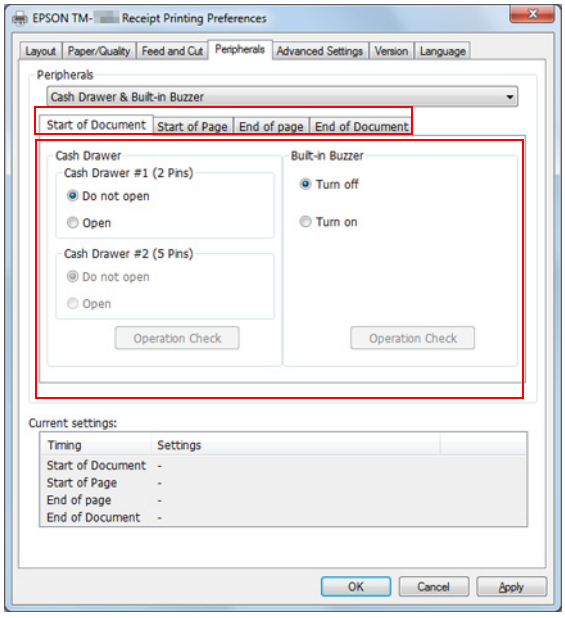


2 From the (Peripherals) pull down list, select the combination of peripheral device to be connected to the printer.



3 Select the timing to set the peripheral device settings.

For detail. refer to "Setting of Peripheral Device" on page 22.



4 Confirm (Current settings) and click (OK).

Setting of Peripheral Device

Settings may be different depending on peripheral devices.

- Cash drawer and external buzzer cannot be used simultaneously.
- Built-in buzzer is not supported on some models.

Cash Drawer

Settings of cash drawer are shown below.

Peripherals	Setting Value	Description
Cash Drawaer #1 (2 Pins)	Do not open	Drawer #1 (2 pins) does not open.
	Open	Drawer #1 (2 pins) opens.
Cash Drawer #2 (5 Pins)	Do not open	Drawer #2 (5 pins) does not open.
	Open	Drawer #2 (5 pins) opens.

Buzzer

Settings of buzzer are described below.

Peripherals	Setting Value	Description
Built-in Buzzer	Turn off	Built-in buzzer does not sound.
	Turn on	Built-in buzzer sounds.
External Buzzer	Turn off	External buzzer does not sound.
	Turn on	External buzzer sounds.
	Pattern	Specify buzzer sound pattern.
	Count	Specify buzzer sound frequency.

Logo Printing

Logo can be printed at the beginning and the end of printing. There are 2 printing methods.

- Print by Registering Logo to Printer Driver (page 23)
- Print by Registering Logo to Printer (page 29)

- The file formats that can be registered are BMP, JPEG, GIF and PNG.
- The maximum file size that can be registered is 2047 x 831 dots (width x height).
  Number of dots is calculated as follow.
  Calculation formula: Number of dots = length (cm) / 2.54 (1 inch) x resolution level of TM printer (DPI)

Print by Registering Logo to Printer Driver

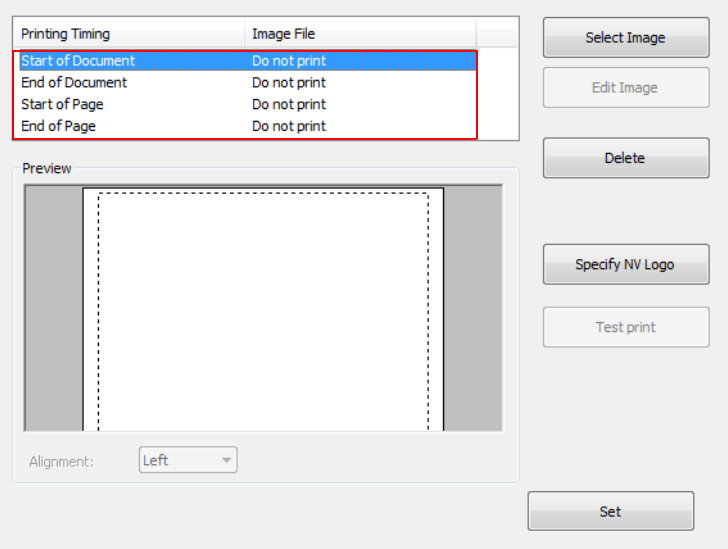
When using a serial interface, it is recommended to register a logo to the printer.
For detail, see "Print by Registering Logo to Printer" on page 29.

Follow the steps below to register a logo and print.

1 Launch the APD5 Utility.

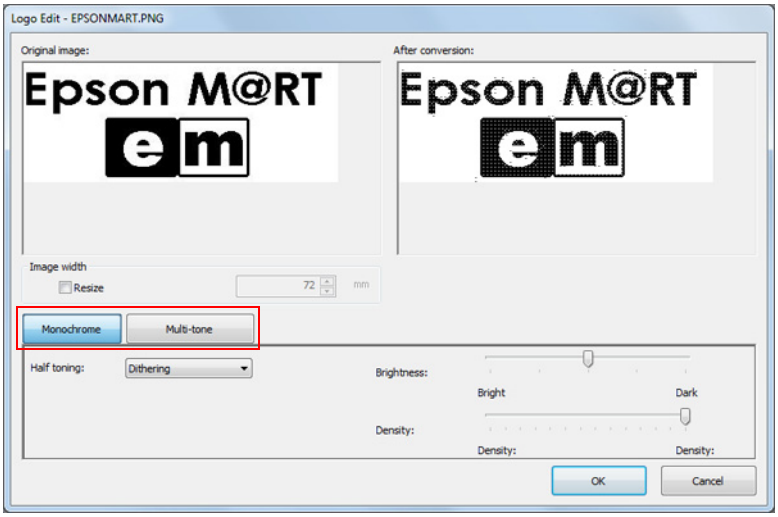
2 Select (Print Logo)

3 Select the position where the logo is printed.
Select the printing position from [Start of Document] / [End of Document] / [Start of Page] / [End of Page].



4 Click (Select Image) to specify the logo to print. Click (OK).

5 The (Logo Edit) screen is displayed. Click (Monochrome) or (Multi-tone) to select the output image format.



[Multi-tone] is not supported for some models.

6 Refer to the preview at the upper part of the screen and edit the image data for logo. When editing is done, click (OK).

Settings are described below.

Item	Description
Resize	When checked, the image can be resized. If the image size is bigger than the paper width and its size is not changed, any part that doesn't fit the paper is cut off.
Image width	Setup the image size after resizing. (Unit: mm)
Half toning	Setup the half-toning type. If (Monotone) is selected in Step 3, select from (Dither)/(Error Diffusion)/(None). If (Multi-Tone) is selected, select from (Dither)/(None).
Brightness	Setup the brightness. If (Monochrome) is selected in Step 3, select from 5 levels. If (Multi-tone) is selected, select from 15 levels.
Density	Setup the printing density.

7 Click (Set).

The logo is registered to the driver.

8 Input the print data to the application used for printing.

9 When printing, the logo is printed at the position set in the APD5 Utility.

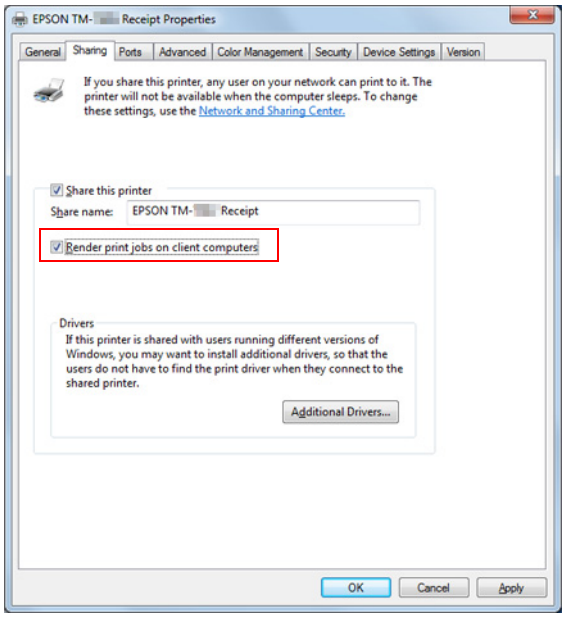
Print Image Logo with Shared Printer

When printing an image logo from a client computer using shared printer, the printer properties need to be set from the server side shared printer.

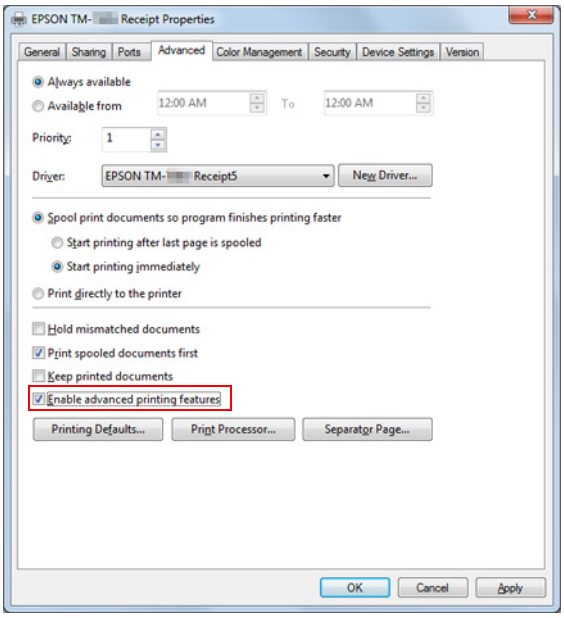
Follow the steps below for setting.

1. Right click the printer and select (Printer Properties).

2. Select the (Sharing) tab and check (Render print jobs on client computers).


EPSON TM- Receipt Properties
General
Sharing
Ports
Advanced
Color Management
Security
Device Settings
Version
If you share this printer, any user on your network can print to it. The printer will not be available when the computer sleeps. To change these settings, use the Network and Sharing Center.
Share this printer
Share name:
EPSON TM- Receipt
Render print jobs on client computers
Drivers
If this printer is shared with users running different versions of Windows, you may want to install additional drivers, so that the users do not have to find the print driver when they connect to the shared printer.
Additional Drivers...
OK
Cancel
Apply

3 Select (Advanced) tab and check (Enable advanced printing features).



The title of checkbox may be different depending on OS, but the function is the same.

4 Click the (OK) button.

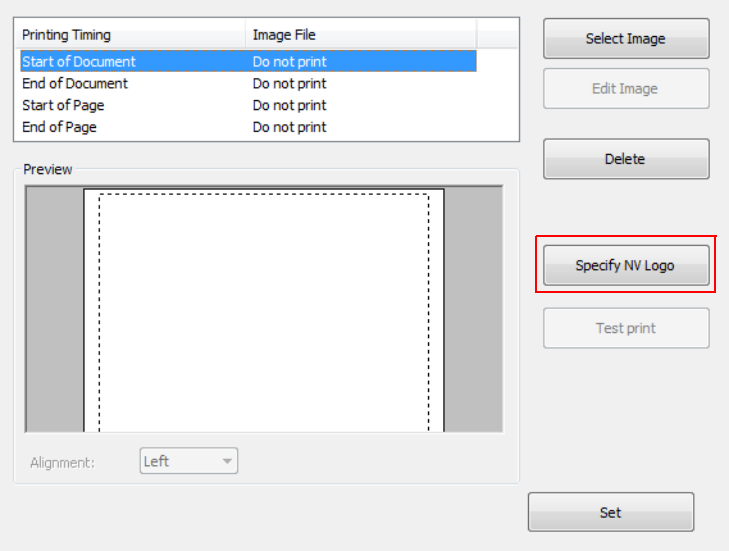
Advanced Method

Print by Registering Logo to Printer

Follow the steps below to register a logo to the printer.

Registration of Logo

1. Launch the APD5 Utility.
2. Select (Print Logo).
3. Click (Specify NV Logo).

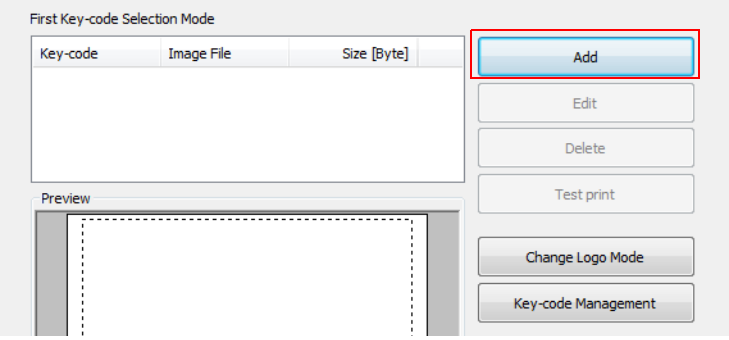


The (Select a key-code) screen is displayed.

4. Click (Storing Logos).

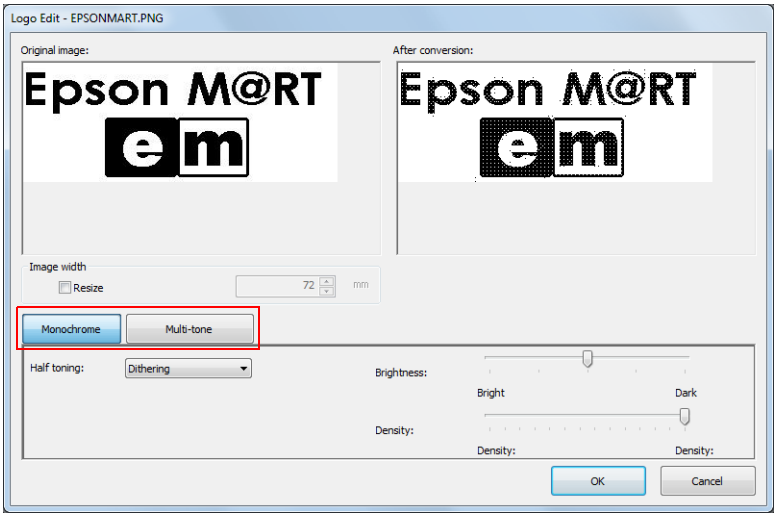
The (Storing Logos) screen is displayed.

5 Click (Add) to specify the image data to print.

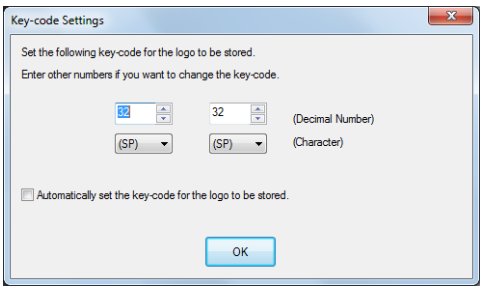


6 The (Logo Edit) screen is displayed. Click (Monochrome) or (Multi-tone) to select the output image format.

> [Multi-tone] is not supported for some models.



7 The (Key-code Settings) screen is displayed. Specify the key-code to set on the logo and click (OK).



8 Refer to the preview at the upper part of the screen and edit the image data for logo. When editing is done, click (OK).

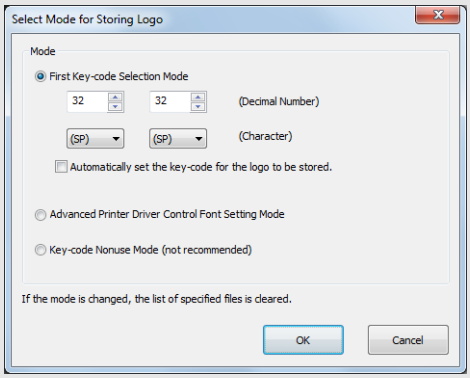
Settings are described below.

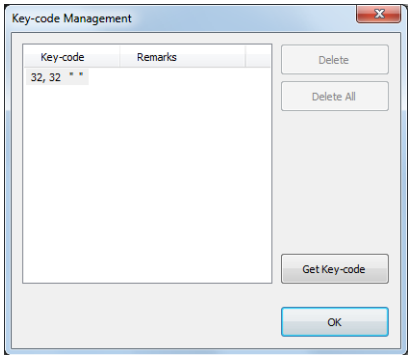
Item	Description
Resize	When checked, the image can be resized. If the image size is bigger than the paper width and its size is not changed, any part that doesn't fit the paper is cut off.
Image width	Setup the image size after resizing. (Unit: mm)
Half-toning	Setup the half-toning type. If (Monotone) is selected in Step 3, select from (Dither)/(Error Diffusion)/(None). If (Multi-Tone) is selected, select from (Dither)/(None).
Brightness	Setup the brightness. If (Monochrome) is selected in Step 3, select from 5 levels. If (Multi-tone) is selected, select from 15 levels.
Densty	Setup the printing density.

9 Click (Store to Printer).

The log is registered to the printer.

Detail of the Logo's Registration Screen

Setting	Description
Key-code List	Displays the logos registered in the printer and the logos to be added in the printer. The logos registered in the printer have at the beginning of the Key-code.
Add	Adds the logo data.
Edit	Edits the halftone and brightness settings of the selected logo data.
Delete	Deletes the selected logo data from the list or deletes logos stored on the printer.
Test Print	Prints the selected logos.
Change Logo Mode	Displays "Select Mode for Storing Logo" screen to allow you to change the setting mode of the (Storing Logos). The current setting is displayed below (Storing Logos). 
First Key-code Selection Mode	Specifies the logo identifying code.
Automatically set the key-code for the logo be stored.	If this is turned on, automatically sets Key-codes to the logos to be registered. If turned off, sets Key-codes when adding or editing logos.
Advanced Printer Driver Control Font Setting Mode	The Advanced Printer Driver allows you to assign a control font (h to l) to your logo instead of using a key code.
Key-code Nonuse Mode (not recommended)	

Setting	Description
Key-code Management	You can check the Key-code of the logo stored in the printer, or delete the logos. 
Get Key-code	Obtains registered Key-code numbers.
Preview	Displays the logo image to be stored on the printer. Logo images stored on the printer are not displayed.
Logo Indicator	Indicator : Registerable memory size in the printer for logos Additional logo data : Size of logos displayed on the list Used amount : Size of registered logos
Save to File	Saves the configured logo data as a file to store it to the printer. The data can also be stored as a bmp file.
Store to Printer	Stores the configured logo data to the printer.

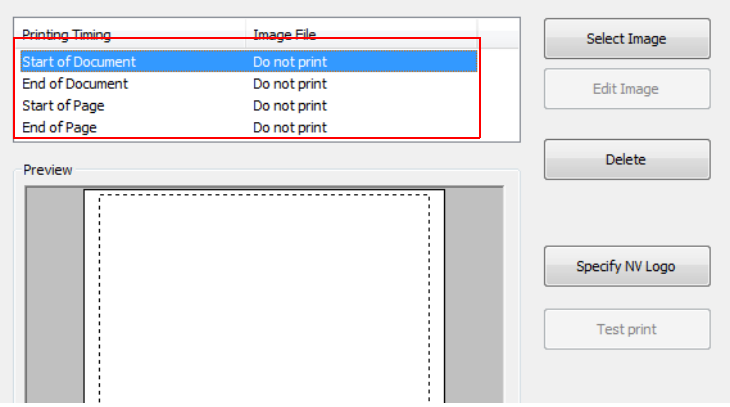
Logo Printing

1 Launch the APD5 Utility.

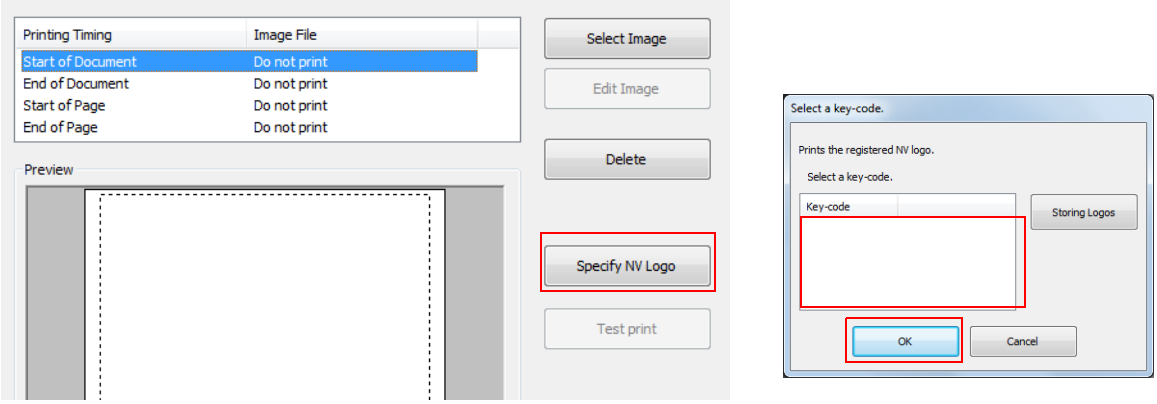
2 Select (Print Logo)

3 Select the position where the logo is printed.

Select the printing position from (Start of Document) / (End of Document) / (Start of Page) / (End of Page).



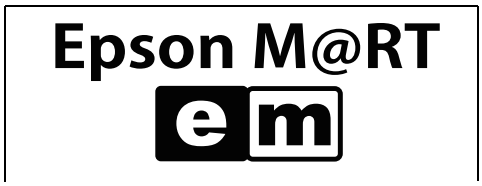
4 Click (Specify NV Logo). The (Select a key-code) screen is displayed. Specify the key-code to set on the logo and click (OK).



5 The APD5 Utility screen appears. Click (Set).

6 Input the print data to the application used for printing.

7 When printing, the logo is printed at the position set in the APD5 Utility.



User Defined Paper Setting

Regular paper size can be printed using the user defined paper setting. It cannot expand/reduce according to the printer's paper width.

User defined paper setting is registered as follow.

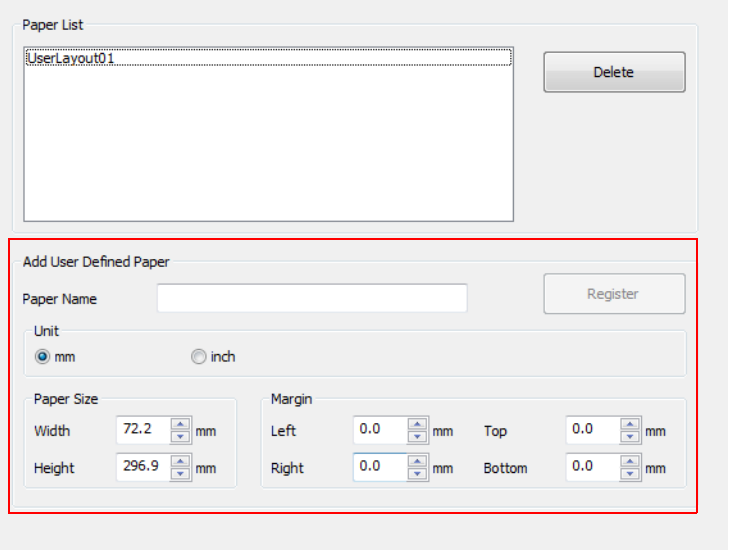
1 Select the TM printer and right click. Select (Printing Preferences).

The (Printing Preferences) screen is displayed.

2 Select (Advanced Settings) tab and click ((N)Advanced Settings).

The APD5 Utility is launched.

3 Select (User Defined Paper). Settings are described below.



Item	Description
Paper Name	Name of the user defined paper. This name is displayed in (Printing Preferences)-(Layout).
Unit	Specify the unit for the paper width setting.
Paper Size	Specify the user defined paper size (width, height).
Margin	Specify the user defined paper size space (top, bottom, left, right).

4 Click (Register).

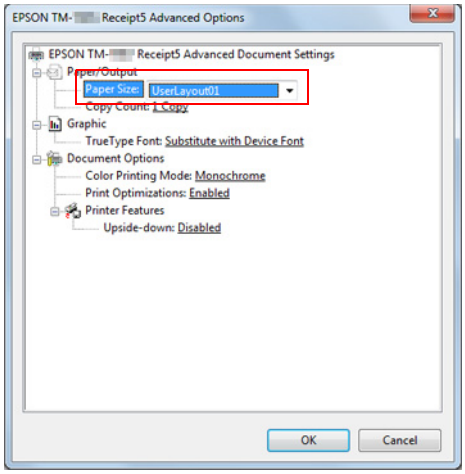
The user defined paper set in Step 3 is registered and displayed in (Paper List).

5 Close the APD5 Utility and (Printing Preferences).

6 Select the TM printer again and right click. Select (Printing Preferences).
The (Printing Preferences) screen is displayed.

7 Select (Layout) tab and click (Advanced).
The advanced document settings screen is displayed.

8 From the paper size, select the user defined paper you defined.
Click (OK).



Barcode Printing

Set a barcode font to the APD5. Barcode can be printed without having barcode encoder in an application or preparing graphic data of barcode. High precision reading of barcode can be printed comparing to when the barcode data is set in an application.

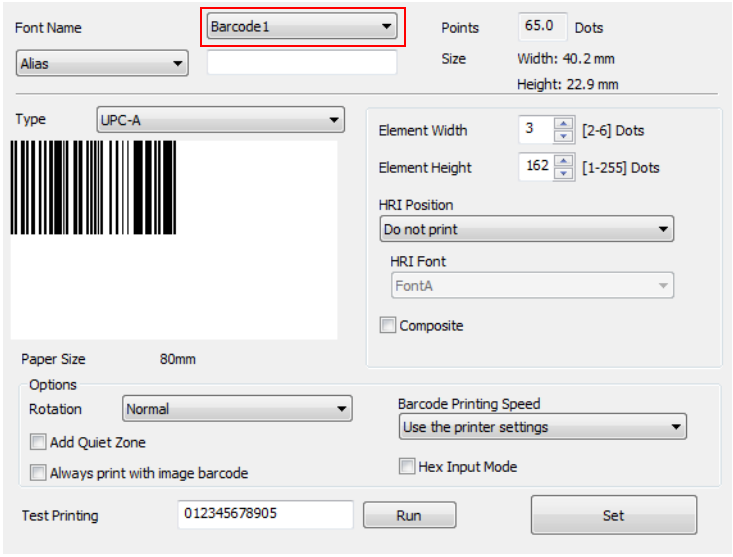
> When using barcode in .Net environment, refer to"Using Barcode in .NET environment" on page 42.

Barcode Font Setting

Set a barcode font using APD5 Utility.

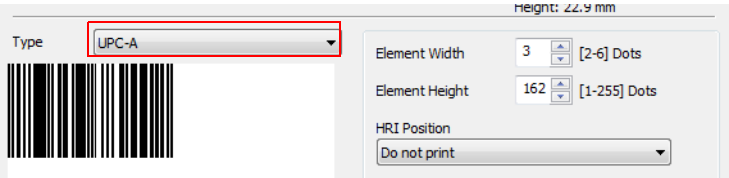
Barcode font is set as follow.

1. Launch the APD5 Utility.
2. Select (Barcode).
3. Select (Barcode1~8) from a font name.

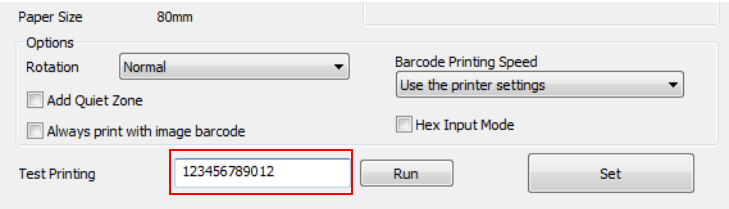


> There is an option that an alias name can be specified for the barcode font (Barcode1~8).
> When specifying an alias name, select "Alias" from the pull down list of [Font Name] below.

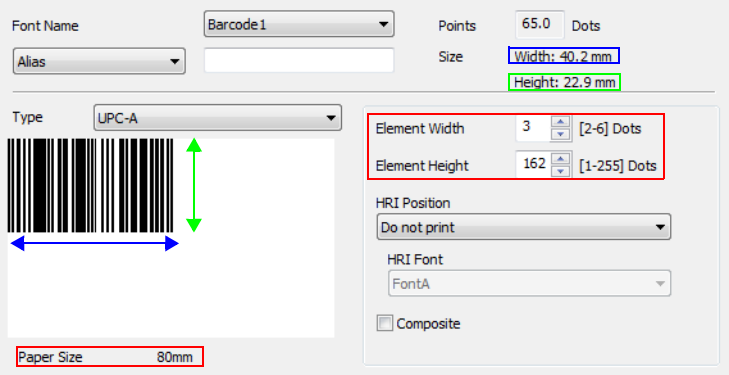
4 Select a barcode type from (Type).



5 When setting the variable-length barcode, enter a number of digits data to print on (Test Printing).

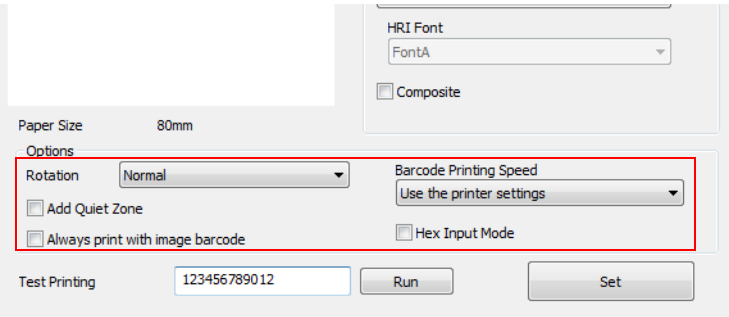


6 Confirm (Size) and (Preview). Setup the followings so that it fits within the (Paper Size).



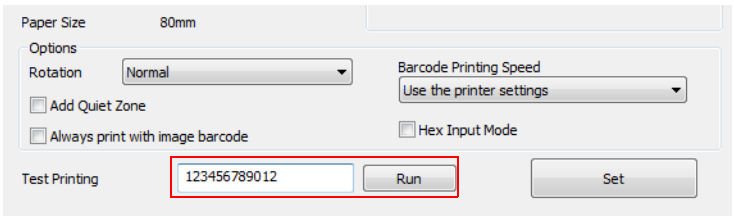
Item	Description
Element Width	Specify the width of the narrowest barcode element. The unit is the minimum dots of the TM printer. The setup and number of characters in barcode determine the width of the barcode. When the width of barcode is wider than the printing area, the barcode may not be printed or run over from the paper.
Element Height	Specify the height of barcode. The unit is the minimum dots of the TM printer. The height of element determines the number of points of barcode font.
HRI Position	Specify the choice, Print/Do not print of HRI characters, and position.
HRI Font	Set the HRI barcode font.
Composite	Print the barcode of composite symbol.

7 Set the following settings on barcode font by option.



Item	Description
Rotation	Set the printing direction of barcode.
Add Quiet Zone	When checked, it creates some space necessary for barcode reading at the right and left of the barcode.
Always print with image barcode	When checked, it always prints the barcode as image.
Barcode Printing Speed	Set the printing speed of barcode. When the barcode cannot be read and is combined with (Rotation), set the printing speed to a slow level.
Hex Input Mode	When checked, the barcode characters are input as binary.

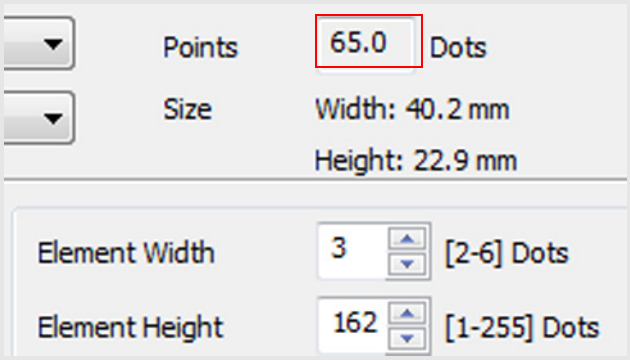
8 Print the barcode with the settings and confirm the result.
Input the barcode data and click (Run).



9 Click (Set).
The barcode font is registered.

Barcode Printing

1 Input the barcode data to the application's print data. Set the followings to the barcode.

Item	Description
Font	Barcode font (Barcode1~8)
Point	The point displayed in the barcode font setting screen. (The point displayed within the red frame in the figure below) 
Language	Western

2 Print after settings are done.

Using Barcode in .NET environment

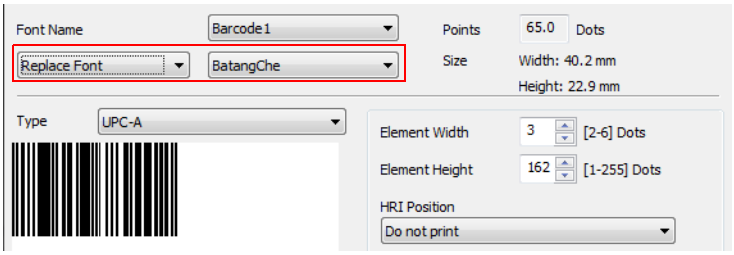
Barcode font cannot be used directly in . Net environment. In APD5, a barcode can be printed in .NET environment by replacing the barcode font with the TrueType font. Replaced TrueType font cannot be used to print characters.

How to Setup

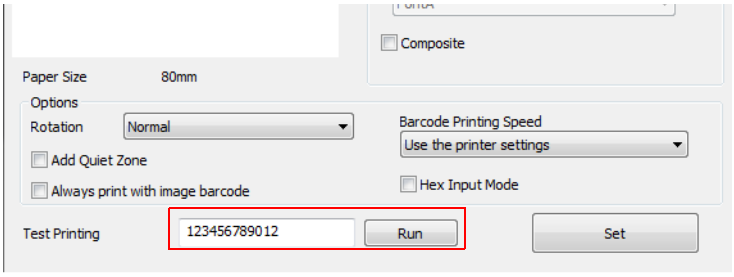
1 Before starting, decide which font is used for font replacing.

2 Set the barcode font.
(Refer to Step 1~6 of "Barcode Printing" on page 41)

3 Select "Replace Font" from the pull down list of the (Font Name) below. Specify a TrueType font to replace the barcode font from the pull down list.



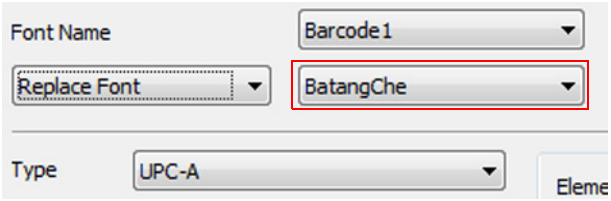
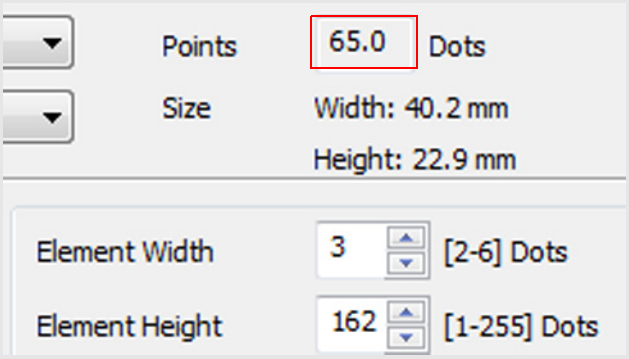
4 Print the barcode with the settings and confirm the result.
Input the barcode data and click (Run).



5 Click (Set) to register the barcode font.

Printing

1 Input the barcode data to the application's print data. Set the followings to the barcode.

Item	Description
Font	A TrueType font used to replace the barcode font (it can be confirmed from the following APD5 Utility screen). 
Point	The point displayed in the barcode font setting screen. (The point displayed within the red frame in the figure below) 
Language	Western

2 Print after settings are done.

2-Dimensional Symbol Printing

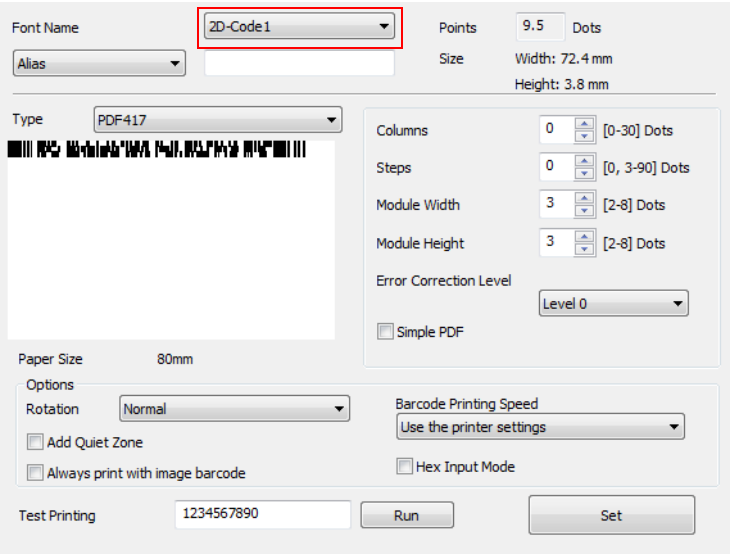
It sets a 2 dimensional symbol font to APD5. The 2 dimensional symbol printing is possible for the customer without implementing the 2 dimensional symbol encoder or preparing a 2 dimensional graphic data in an application.

When using the 2 dimensional symbol font in .NET environment, refer to "Using 2 Dimensional Symbol in .NET environment" on page 48.

2 Dimensional Symbol Font Setting

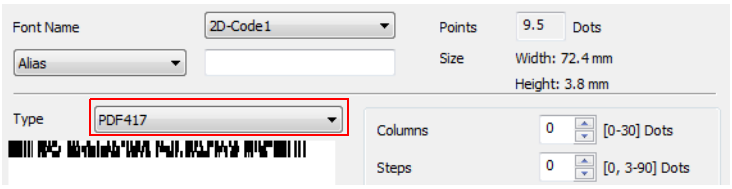
It sets a 2 dimensional symbol font using APD5 Utility.
Follow the steps below.

1. Launch the APD5 Utility.
2. Select (2-dimensional symbol).
3. Select (2D-Code1~8) from a font name.

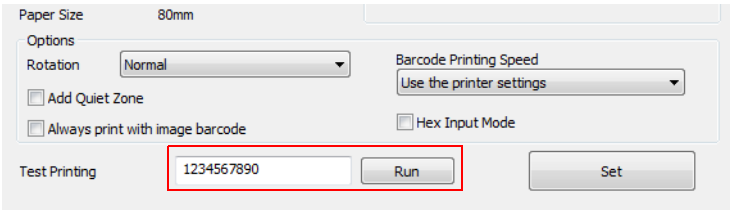


There is an option that an alias name can be specified for the 2 dimensional symbol font (2D-Code1~8).
When specifying an alias name, select "Alias" from the pull down list of [Font Name] below.

4 Select a 2 dimensional symbol type from (Type).

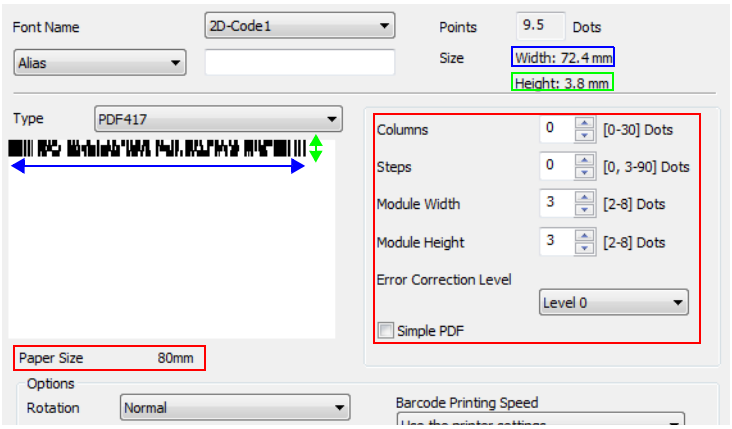


5 Input the number of digits to use for (Test Printing).

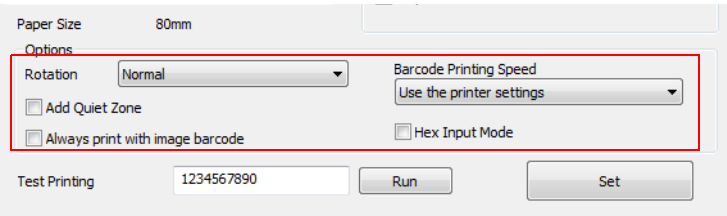


6 Confirm (Size) and (Preview). Setup the followings so that the 2 dimensional symbol fits within the (Paper Size).

> Settings are different depending on the 2 dimensional symbol type.
> For detail, refer to "List of Settings for 2 Dimensional Symbol" on page 50.

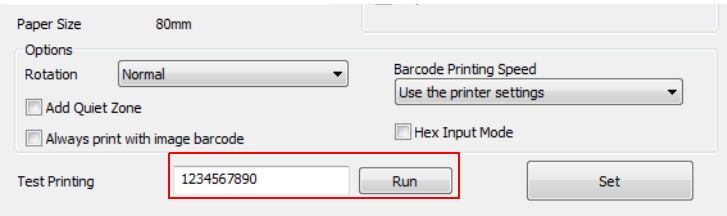


7 Set the 2 dimensional symbol font arbitrarily using the following settings .



Item	Description
Rotation	Set the printing direction of the 2 dimensional symbol.
Add Quiet Zone	When checked, some space are created at the top, bottom, left and right of the 2 dimensional symbol that are necessary for reading.
Always print with image barcode	When checked, it always prints the 2 dimensional symbol as image.
Barcode Printing Speed	Set the printing speed of the 2 dimensional symbol. When the 2 dimensional symbol cannot be read and is combined with (Rotation), set the printing speed to a slow level.
Hex Input Mode	When checked, the 2 dimensional symbol characters are input as binary.

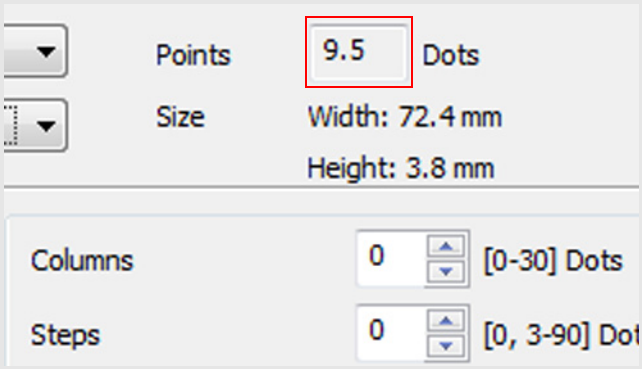
8 Print the 2 dimensional symbol with the settings and confirm the result. Input the 2 dimensional data and click (Run).



9 Click (Set) to register the 2 dimensional symbol font.

2-Dimensional Symbol Printing

1 Input the 2 dimensional symbol data to the application's print data. Set the following settings on the 2 dimensional symbol data.

Item	Description
Font	2-dimensional symbol code (2D-Code1~8)
Point	Point displayed in the 2 dimensional symbol font setting screen. (Point number showed within the red frame) 
Language	Western

2 Print after settings are done.

Using 2 Dimensional Symbol in .NET environment

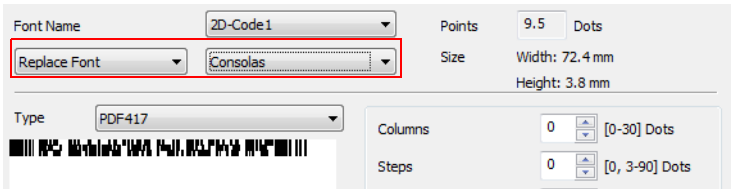
2 dimensional symbol font cannot be used directly in .Net environment. In APD5, it is possible to print barcode in .NET environment by replacing the 2 dimensional symbol font with a TrueType font (Western) using the font replace function.

How to Setup

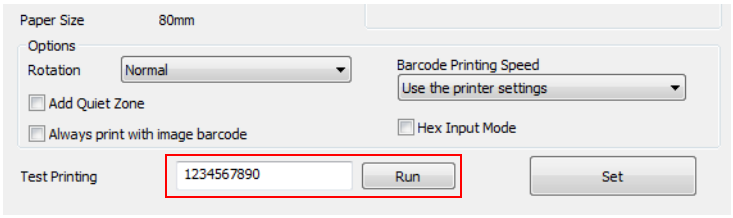
1. Before starting, decide which font is used for font replacing.

2. Set a 2 dimensional symbol font.
(Step 1 to 6 in "2-Dimensional Symbol Printing" on page 47)

3. Select "Font Replace" from the pull down list of the (Font Name) below. Specify a TrueType font to replace the 2 dimensional symbol font from the pull down list.



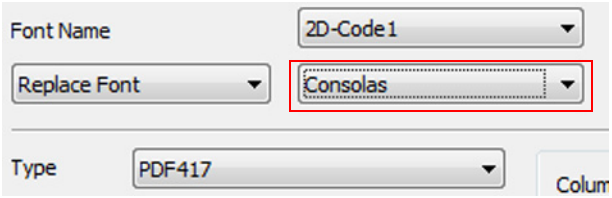
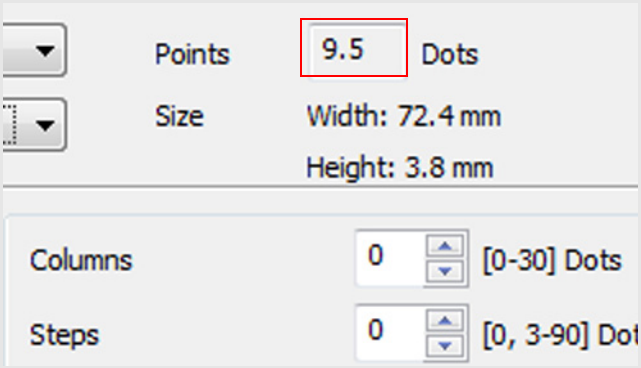
4. Print the 2 dimensional symbol with the settings and confirm the result. Input the 2 dimensional symbol data and click (Run).



5. Click (Set) to register the 2 dimensional symbol font.

Printing

1 Input the 2 dimensional symbol data to the application's print data. Set the following settings on the 2 dimensional symbol data.

Item	Description
Font	A TrueType font to replace the 2 dimensional symbol code (It can be confirmed from the following screen of the APD5 Utility) 
Point	Point displayed in the 2 dimensional symbol font setting screen. (The point number showed within the red frame) 
Language	Western

2 Print after the settings are done.

List of Settings for 2 Dimensional Symbol

2D-symbol	Item	Description
PDF417	Columns	Set the number of columns of PDF417 to print.
	Steps	Set the number of steps of PDF417 to print.
	Module Width	Set the cell (module) width of PDF417 to print.
	Module Height	Set the cell (module) height of PDF417 to print.
	Error Correction Level	Set the error correction level (0 to 8) of PDF417. Select the higher level when the data size of 2 dimensional symbol is large.
	Simple PDF	Set the 2 dimensional symbol to simple PDF.
QR Code	Model	Set the QR Code model (Model 1, Model 2).
	Module Width	Set the cell (module) width of QR Code to print.
	Version	Specify the CR Code version.
	Error Correction Level	Set the QR Code error correction level (Level L, Level M, Level Q, Level H).
	Characters	Approximate number of characters QR Code can present is displayed.
MaxiCode	Mode	Set the MaxiCode mode (2~6). When selecting "Mode 2" or "Mode 3", check the (Hex Input Mode).
GS1 Databar Stacked	Module Width	Set the GS1 DataBar Stacked Omni-directional model cell (module) to print.
	Composite	Print the 2 dimensional symbol of composite symbol.
GS1 Databar Stacked Omni-directional	Module Width	Set the GS1 DataBar Expanded Stacked model cell (module) to print.
	Composite	Print the 2 dimensional symbol of composite symbol.
GS1 Databar Expanded Stacked	Module Width	Set the GS1 DataBar Expanded Stacked model cell (module) to print.
	Maximum Width	Set the maximum width of the GS1 DataBar Expanded Stacked model cell (module) to print.
	Composite	Print the 2 dimensional symbol of composite symbol.

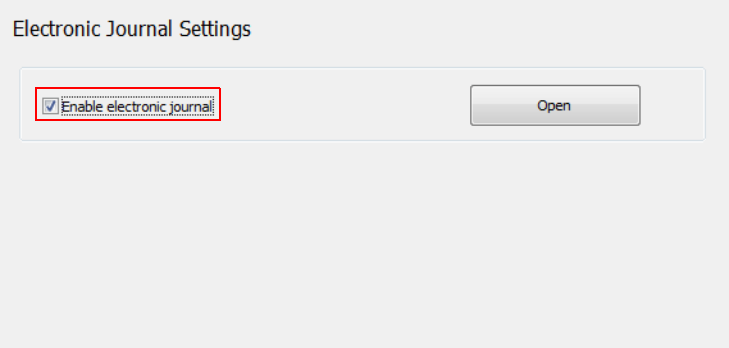
Electronic Journal

APD5 provides the electric journal function. Journal data can be stored without journal printers. Also, no paper is necessary, because they are stored as electric data.
Electric journal are stored per printed document unit. It is also possible to confirm the stored data through the viewer, print and search the stored file using date.

> This function cannot be used depending on the model of TM printer.

Electric Journal Setting

1. Launch the APD5 Utility.
2. Select (Electronic Journal).
3. Check the (Enable electronic journal) check box.

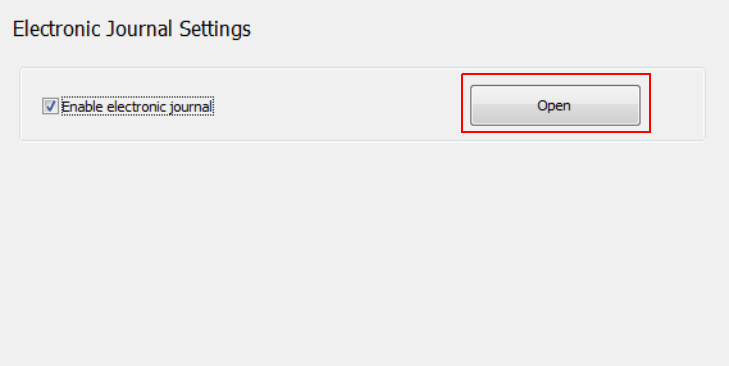


Confirmation of Electric Journal

1 Launch the APD5 Utility.

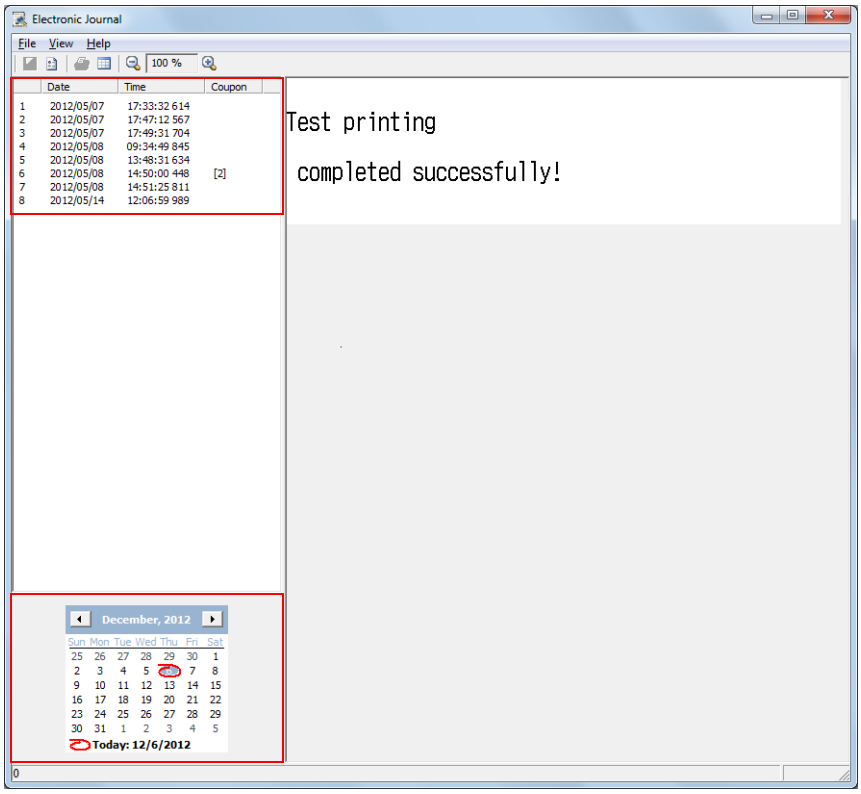
2 Select (Electronic Journal).

3 Click (Open).
The electric journal screen is opened.



4 The electric journal is displayed. Select the confirmation period by dragging dates from the calendar. Click the print data from the list.

Printed data image file is displayed on the right. When selecting some weekly periods over a month, drag the frame to expand. A calendar showing 2 months are displayed.



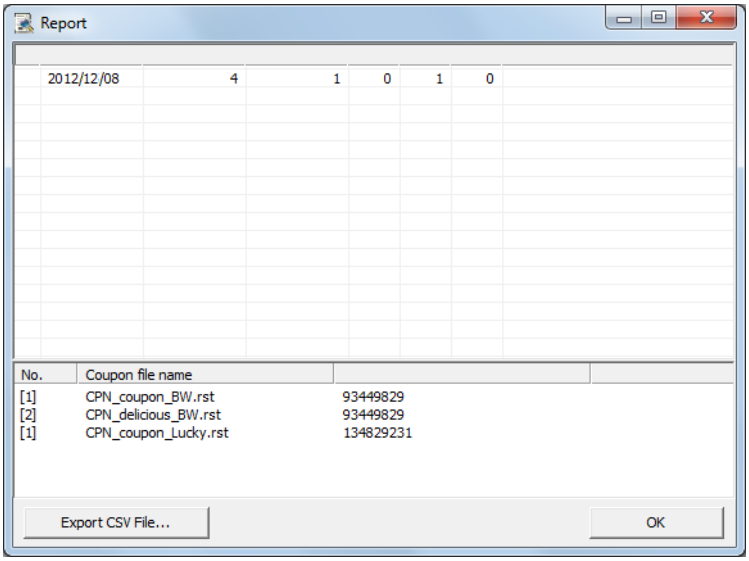
Item		Description
File	Export Text File	Output the selected print data to a text file. (If graphic is used, there would no text output.)
	Export BMP File	Output the selected print data to a bitmap file.
	Print	Print the selected print data with a printer.
	Exit	Quit the electric journal.
View	Refresh	Refresh the display.
	Language	Switch languages.
	Option	Printer's setting values are read and adjust the displayed image to the actual printed image.
	Report	Report a number of receipts and coupons per day. (Refer to "Displaying Report" on page 54)
Help	About	Display the version of electric journal.

Displaying Report

Select the period to be confirmed. Then select [View] - [Report] to display the following screen.

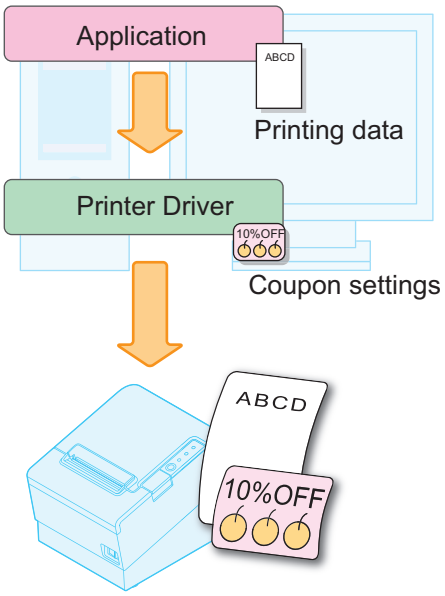
It is possible to know the printing status and a number of printed coupons per day.

Click [Export CSV File] to save the report as CSV file.



Coupon Printing

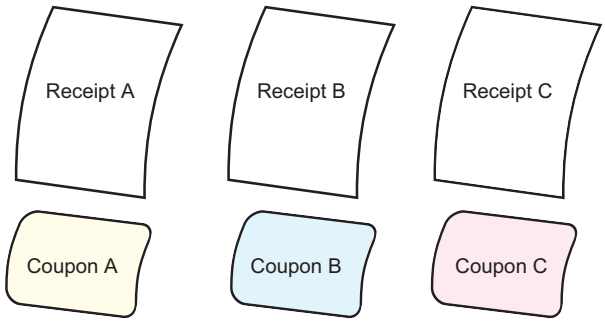
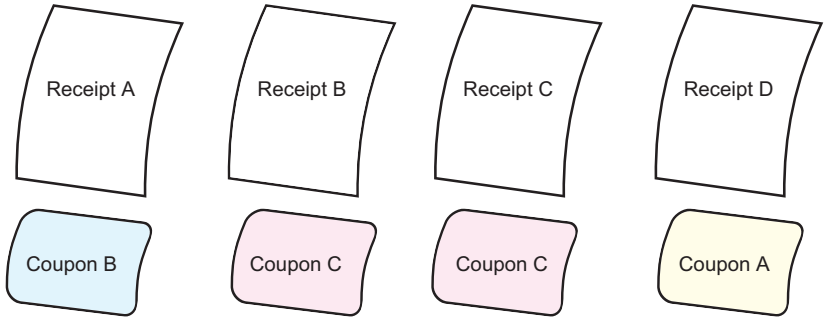
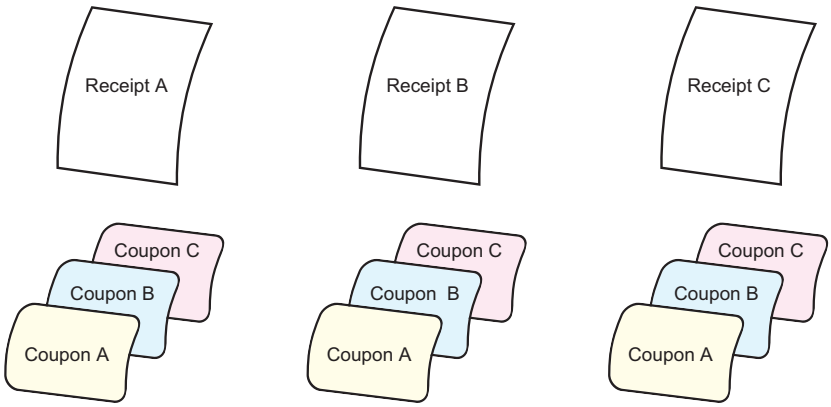
APD5 provides the coupon printing function. Coupons can be printed with various settings without modifying the customer's POS application.

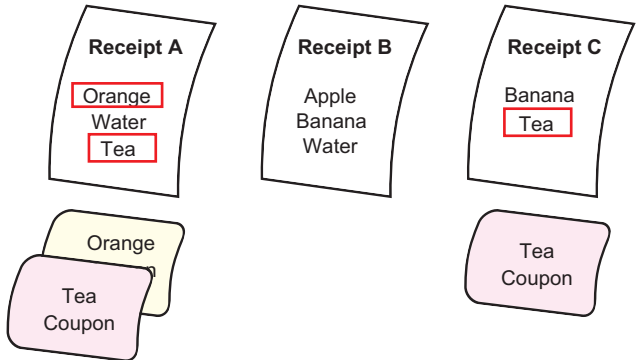
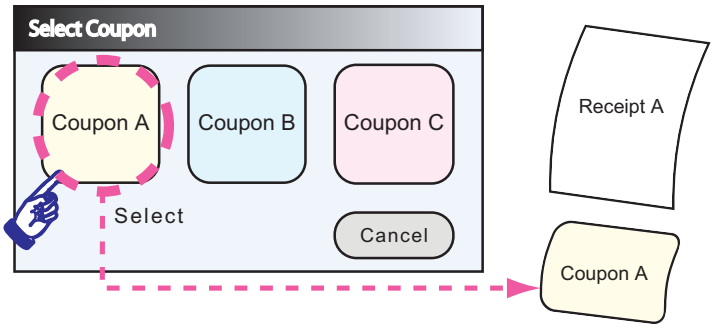


This function cannot be used depending on the model of TM printer.

Coupon Printing Method

There are following types of coupon printing.

Method	Desctiption
Sequential	Prints coupons in the registered sequence. 
Random	Prints registered coupons randomly. 
Print all	Prints all registered coupons. 

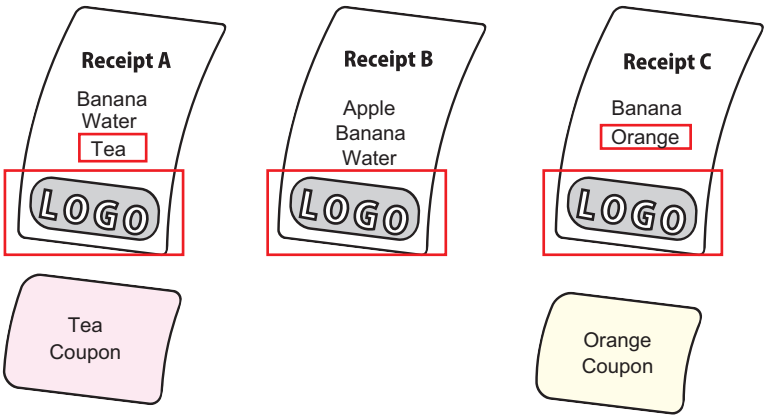
Method	Desctiption
Keyword match	This prints coupons when the print data includes text data that has been linked to the coupon image in advance. If the print data does not include the text, search/print cannot be performed. 
Popup selection	During receipt printing, a popup window appears on the computer screen and the operator can select the coupon. In the case of popup selection, it is recommended that a touch panel is prepared for the computer display screen. 

- Keyword search is only possible when the print data is in the device font. Graphics (True Type font, image files, etc.) cannot be searched.
- A keyword containing special characters may not correspond depending on an application.

Logo Printing During Auto Cut

Coupon images are printed as logos on print data but logos are not printed on coupons.

The following kind of printing can be performed through designating keywords on logo files.



In this example, "BottomLogo" is set as the keyword in the logo file.

Conduct settings as follows.

1. In the [Automatic Paper Cut] setting, set [Not use this function].
2. Conduct the following setting for the logo coupon image keyword. See "Setting of the Coupon Printing Method" on page 63 for the setting method.

Keyword	Description
TopLogo	Prints the logo before the print data.
BottomLogo	Prints the logo after the print data.

3. Designate the coupon printing method.
   Coupon printing can be set in combination with any method.

Coupon Data Format

- Image file (BMP, JPEG, PNG, GIF)
  The printed size is up to height of 2,047 pixels.

Coupon Registration

Configures the coupon data to be registered.

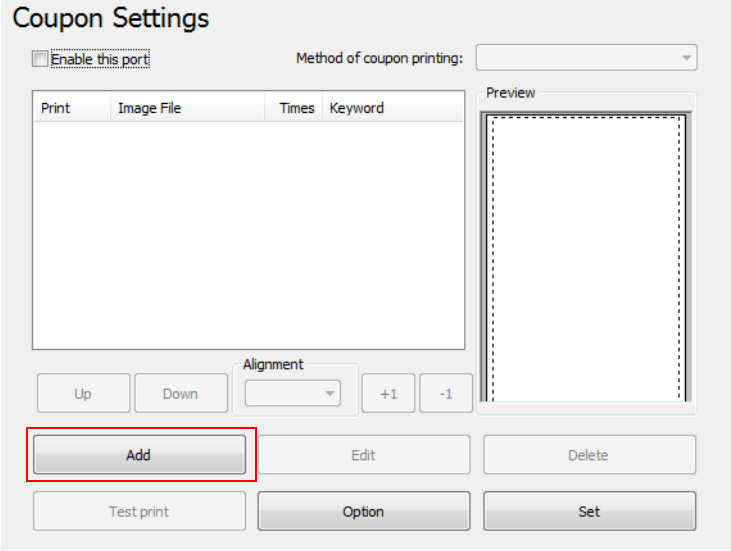
- Prepare a coupon image in advance.
- Printing barcode or 2 dimensional symbol data on coupons
  - ∗ Make sure that barcode or 2 dimensional symbol image is black.
  - ∗ Make sure the coupon image size doesn't need to be reduced.
  - ∗ Please conduct a reading test on the barcode or 2 dimensional symbol.
- Coupons can be registered up to 100 coupons.

Follow the steps below.

1 Launch the APD5 Utility.

2 Select (Coupon Settings).

3 Click (Add).

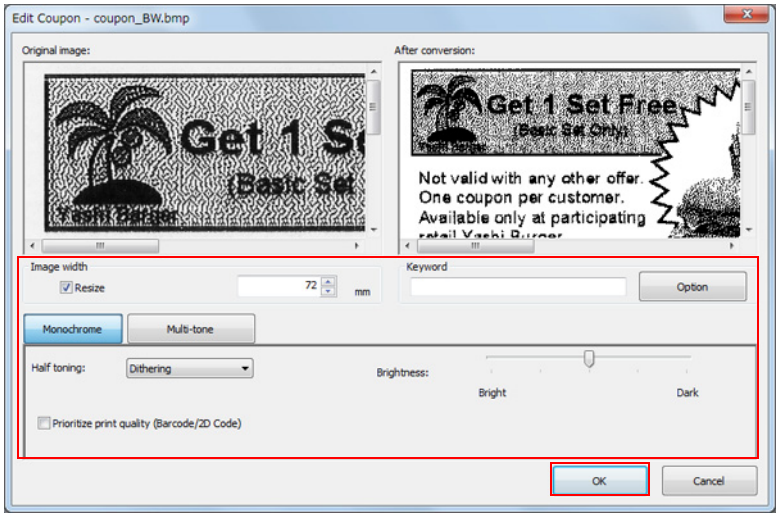


4 Designate the image data you want to register on coupons.

bmp, jpeg, gif and png files of up to height 2047 pixels and width 576 pixels (dots) can be designated.
Through setting the printer paper width, the maximum number of pixels in the paper width can change.
If the coupon width exceeds the paper width, the coupon is resized to fit inside the paper width.

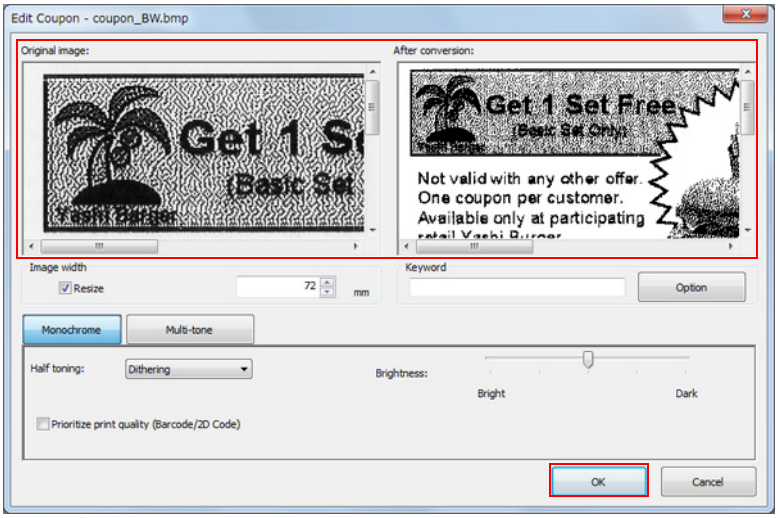
5 The "Edit Coupon" screen is displayed. Click the (Monochrome) or (Multi-tone) button to select the format of the image to be printed.

Colors are reduced to 2 colors with (Monochrome) selected and to 16 colors (shades) in grayscale with (Multi-tone) selected.



[Multi-tone] is not supported for some models.

6 Edit the image data while referring to the preview at the top of the screen. When editing is finished, click the (OK) button.

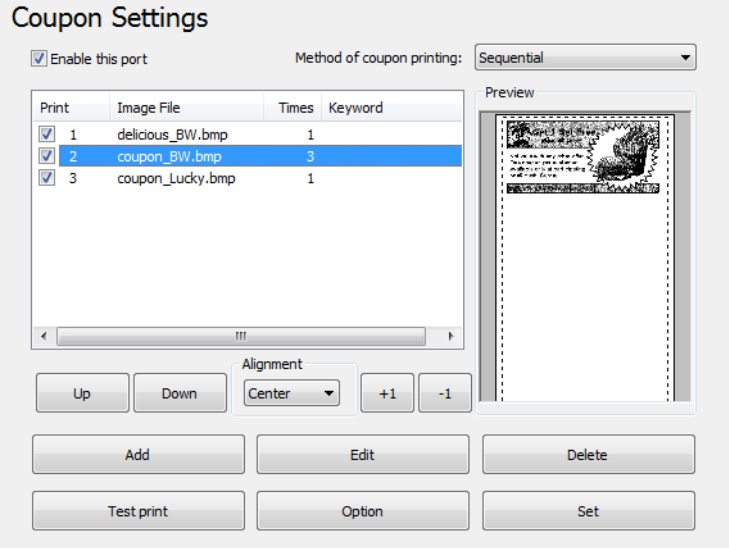


Configure the following.

Setting	Description
Image width	Checks Resize and sets the image printing width (unit: mm). If Resize isn't checked, printing is done according to the image size. If the image is too large, the part that exceeds the paper size isn't printed.
Keyword	Configures the keyword on the coupon image. If the (Method of coupon printing) is set to (Keyword match), coupons are printed when the keyword that is set here is included in the print data.
Option	Configures (Case-sensitive)/(Find whole words) for the keyword match conditions. See "Keyword Match" (p.63) for search details.
Half toning	Configures the type of half toning from (Dithering)/(Error diffusion)/(None).
Brightness	Configures brightness.
Prioritize print quality (Barcode/2D code)	Coupon image containing barcode and two-dimensional symbol is checked. When printing a coupon image with this setting, the print speed slows down.

7 Coupon data is added to the list.

If the check mark on the left side of the list is removed, the coupon will not be printed. By selecting the registered coupon, contents can be confirmed inside the preview area.

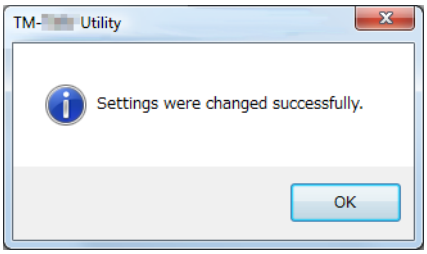


8 In Layout, designate the printing layout.

9 If registering multiple coupon data, repeat steps 3 to 9.

10 Click (Set) to register the coupon.

11 When registration is finished, click the (OK) button.

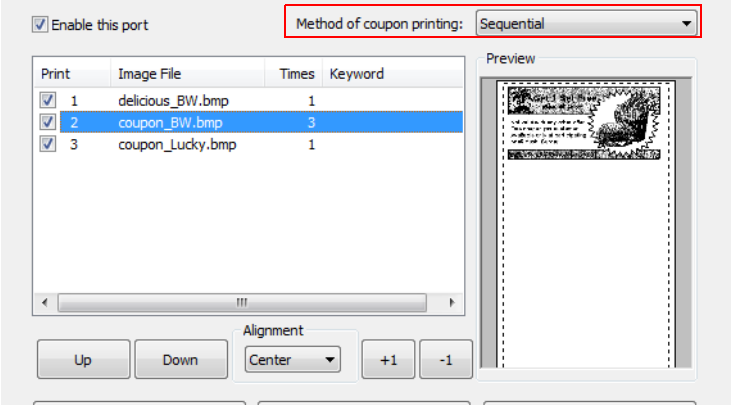


If coupon data is registered in the TM-T88V Utility, the coupon data registered in the coupon module is stored in the computer. See below for the storage destinations:

* Windows 8
  C:\ProgramData\epson\Model specific folder (e.g. TM88VUtl)\Coupon
* Windows 7/Vista
  C:\ProgramData\EPSON\Model specific folder (e.g. TM88VUtl)\Coupon
* Windows XP/2000
  C:\Documents and Settings\All Users\Application Data\EPSON\
  Model specific folder (e.g. TM88VUtl)\Coupon

Setting of the Coupon Printing Method

Click [Method of coupon printing] to select the method for coupon printing.



The coupon printing methods is as follows .

Selection	Description	Page
Sequential	Prints coupons in the numbered sequence on the list.	p.56
Random	Prints registered coupons randomly.	p.56
Print all	Prints all registered coupons.	p.56
Keyword match	This prints coupons when the print data includes text data that has been linked to the coupon image in advance. If the print data does not include the text, search/print cannot be performed.	p.57
Popup selection	During receipt printing, a popup window appears on the computer screen and the operator can select the coupon.	p.57

Keyword Match

In keyword match, the printed keyword is set according to each coupon data, and the coupon is printed when the print data text includes the keyword. In optional settings, search conditions can be set and keywords that are not printed can be registered. (See "Optional Settings" on page 64).

Non-printed Keyword

When a keyword that is set here is included in the print data, coupons aren't printed even if keyword that was set in other coupons is included.

This can be set using [Coupon Settings] - [Option]. See "Coupon Printing Settings" on page 66 for details.

Optional Settings

The following conditions can be appended to keyword search.

Settings	Description
Case-sensitive	Searches for the set keyword according to upper case/lower case letters. This is useful for searching for words composed of alphabetical letters.
Find whole words	Searches for the set keyword according to word.

Keyword Search Judgment Method

The following shows results in the case where all optional settings are enabled.

Keywords	Print Data	Search Results	Remarks
Apple	Apple	Valid	
	apple	Invalid	Search is conducted when the (Case-sensitive) check mark is removed.
	AppleCandy	Invalid	Search is conducted when the (Find whole words) check mark is removed.
	appleCandy	Invalid	Search is conducted when the all optional settings are removed.
	Apple Candy	Valid	

Application of Settings

An applicable coupon is issued at a ratio of 1 per 100

1. Applicable coupons and non-applicable coupons are prepared.
2. Select (Random) from the Method of coupon printing: and set the number of applicable coupons to 1.
3. Set the number of non-applicable coupons to 99.

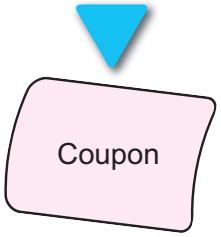
Coupon issue when the total purchase price is $100 to $999

1. Select (Keyword match) for the Method of coupon printing: and set the coupon keyword to "Total_ _$" (underlining indicates spacing).
   Remove the check mark from (Find whole words) under keyword settings.

When the number of printed digits per line is fixed at 15.

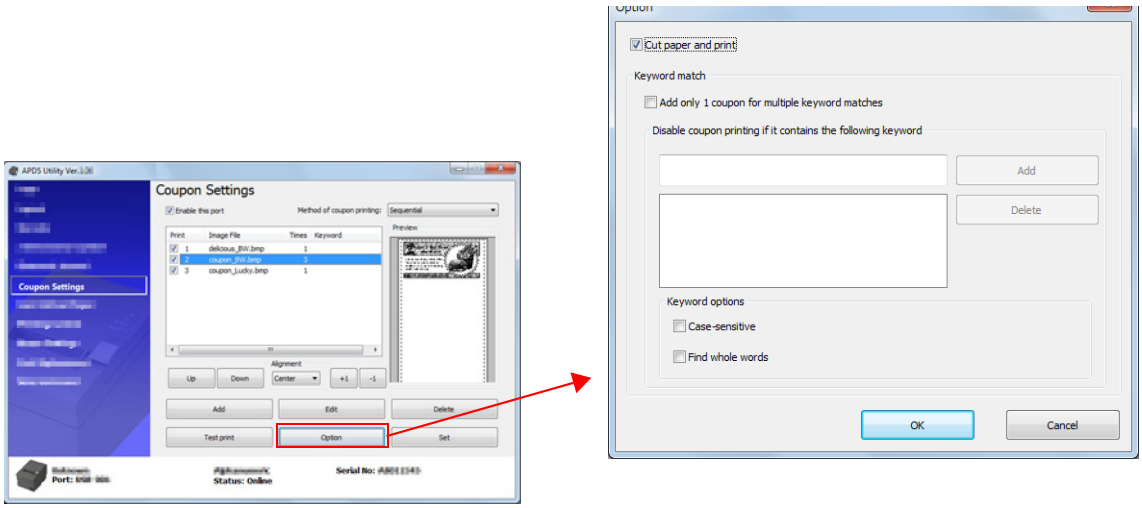
Keyword : Total:␣␣$

Print result : Total:␣␣$100.00␣␣␣␣

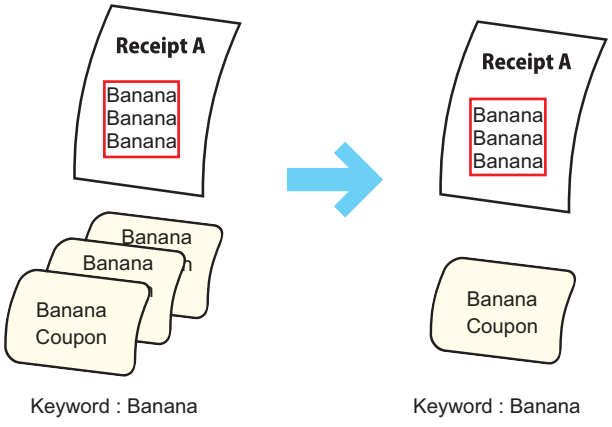


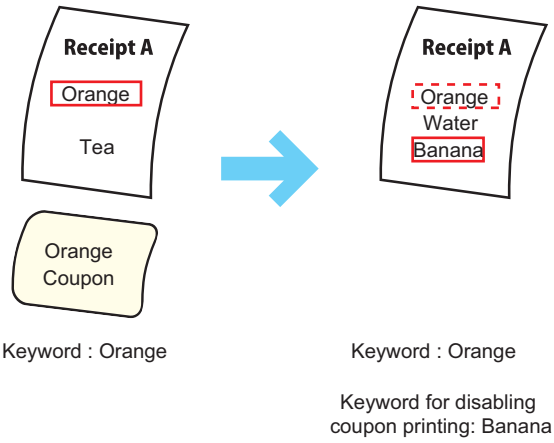
Printing Settings

Configure the coupon printing settings under (Option).



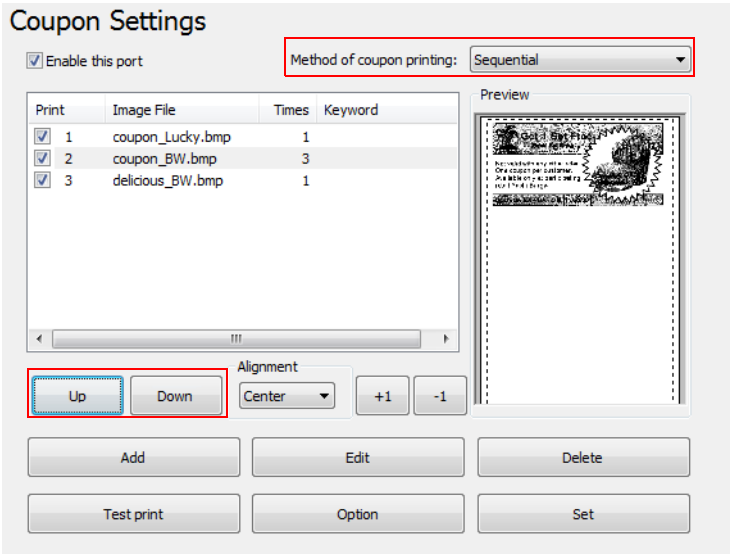
Configure the following.

Settings	Description
Cut paper and print	When this is checked, auto cut is conducted for every printed coupon.
Add only 1 coupon for multiple keyword matches	When this is checked, only 1 coupon is printed even when multiple keywords linked to the coupon data are detected in the print data. When the check mark is removed, the coupon is printed in a quantity corresponding to the number of times the keyword is detected. This setting is enabled only when (Method of coupon printing) is set to (Keyword match). 

Settings	Description
Disable coupon printing if it contains the following keyword	Sets a keyword for disabling coupon printing When the keyword set in this setting is included in the text of printed data, coupons that contain a keyword match are not printed. Up to 100 keywords can be set. 
Keyword option	Set (Case-sensitive)/(Find whole words) for the keyword match condition under (Disable coupon printing if it contains the following keyword). See "Keyword Match" on page 63 for search details.

Designating the Printing Sequence

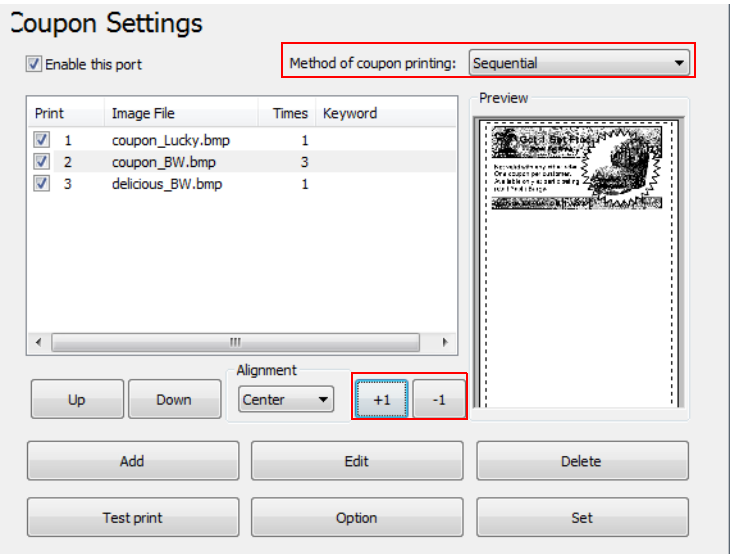
When [Method of coupon printing] is set to "Sequential," coupons are printed in the numbered sequence on the list.



The sequence can be changed by selecting a coupon and clicking the [Up]/[Down] buttons.

Designation of Printing Frequency

Designate the coupon printing frequency when [Method of coupon printing] is set to "Sequential" or "Random."



Select the coupon and click the [+1]/[-1] buttons to change frequency.

- When [Method of coupon printing] is set to "Sequential", coupons are printed the designated number of times sequentially.
  For example, if the frequency is 3 for No. 2 coupon and 1 for other coupons, printing will take place in the following sequence: No.1, No.2, No.2, No.2, No.3.
- When [Method of coupon printing] is set to "Random," coupons are printed randomly while taking the printing frequency into account.
  For example, if the frequency is 3 for No. 2 coupon and 1 for the other coupons, the number of printed No. 2 coupons will be 3 times more than the other coupons.

Sending Commands

APD5 can control a device by sending commands.

There are following methods.

- Control a printer using a control font (page 69)
- Control a printer using a controlA font (page 70)
- Control a printer using the ESC/POS commands (page 72)

Control a printer using a control font

Control a printer using a control font. A control font refers to a font in which control commands of device are embedded into a specific control character. When a control font is specified, it controls the device when printing.

For details of control font, refer to "Printer Specifications".

Use of Control Font

1 Specify a control font to control a device to the print data of printing application.

2 For the specified control character, set the followings.

Item	Setting Value
Font	control
Point	1
Language	Western

3 Execute printing.

4 The control defined by the control font is executed.

Control a printer using a controlA font

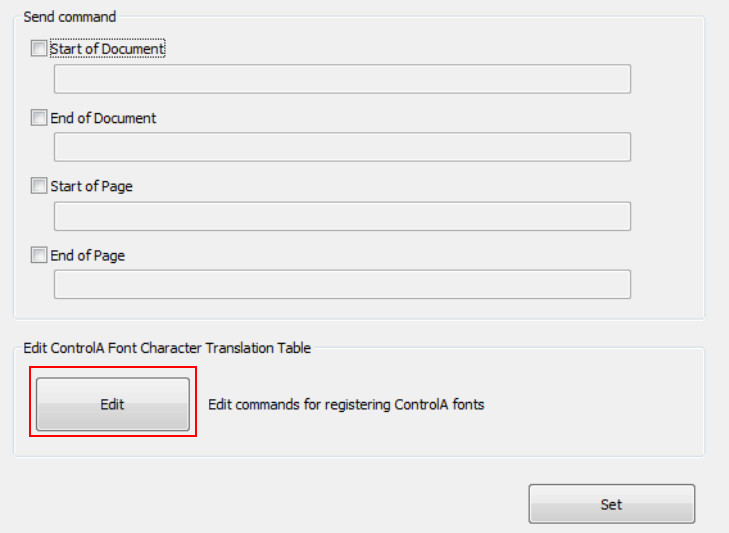
Using a ControlA font, a printer is controlled. ControlA font is the font in which ESC/POS command is set to arbitrary control characters. When specifying the controlA font to print data, ESC/POS command is executed.

ControlA Font Setting

1 Launch the APD5 Utility.

2 Select (Send command).

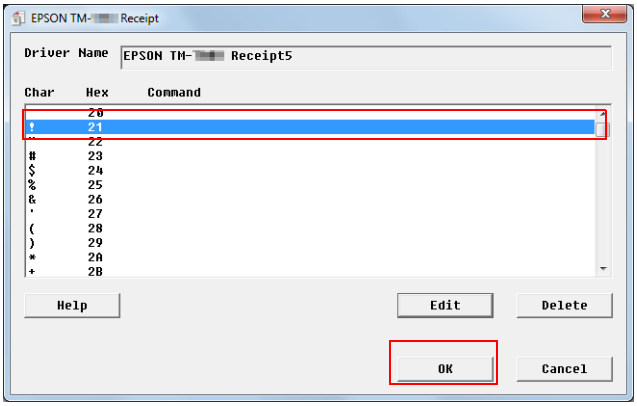
3 Click (Edit).



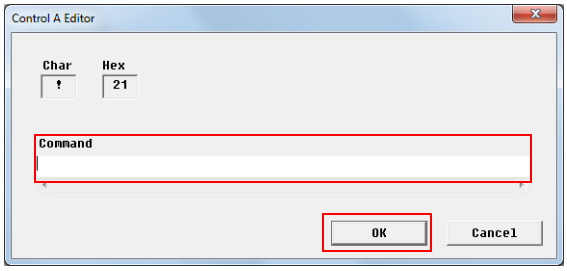
The control font setting screen appears.

4 Select a character to be used to define control and click (Edit).

For example, set the controlA font to "!".



5 The control A Editor is opened. In the text box of (Command), input ESC/POS command. Click (OK) when done.



6 The Utility screen is displayed. Click (OK).

7 The APD5 Utility screen appears. Click (Set).
The ESC/POS command is set to "!".

Use of ControlA font

1 Input a control character to become the controlA font which will be included in the print data of printing application.

2 For the specified control character, set the followings.
For example, specify "!".

Item	Description
Font	controlA
Point	1
Language	Western

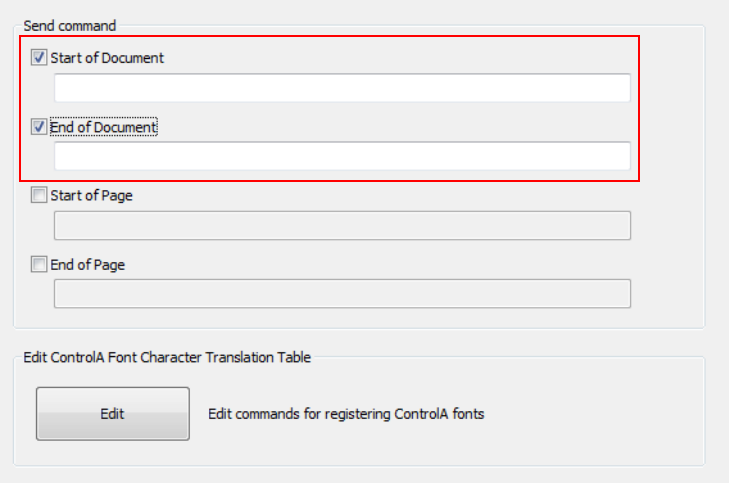
3 Execute printing.

4 The control defined by the controlA font is executed.

Control a printer using the ESC/POS commands

Control the printer by sending the ESC/POS command.

1. Launch the APD5 Utility.
2. Select (Send command).
3. Check the timing when the command is sent and input ESC/POS command in the text box.



4. Click (Set).

Based on the settings, the command is sent during printing and device is controlled.

Character Printing (Device Font)

Device Font is the font set built into the TM printer.

- Some fonts are not supported, depending on the model of TM printer. See “Printer Specification” for details.
- Font with [254/255] after the font name is user defined pages. See the Technical Reference Guide for the TM printer you are using for a description of this setting.
- See the Technical Reference Guide for TM printer you are using for the number of dots for each font.

Device Font prepares fonts for each character size. As with TrueType fonts, point size is not specified separately from the font; rather, character size is specified by selecting a font.
The following sizes are available with Device Font.

Width \ Height	Standard	Double	Fourfold	Eightfold
Standard	FontA11	FontA12		
Double	FontA21	FontA22	FontA24	
Fourfold		FontA42	FontA44	FontA48
Eightfold			FontA84	FontA88

Standard	FontA11
Double height	FontA12
Double width	FontA21
Double height / width	FontA22

- Print Device Font in Win32 Environment
- Print Device Font in .NET Environment

Print Device Font in Win32 Environment

Follow the steps below to print.

1 Set the followings to print data of application.

- Device Font
- Point
- Language

The setup point is different even with the same font depending on the TM printer.
The point of device font can be confirmed by launching the APD5 Utility and selecting the device font to use from the replacing font in [Font Replacement]-[Replacing TrueType Font].

2 Print after settings are done.

Print Device Font in .NET Environment

Device font cannot be used directly in .Net environment. With APD, the device font is used in .NET environment using the font replacement function.

How to Setup

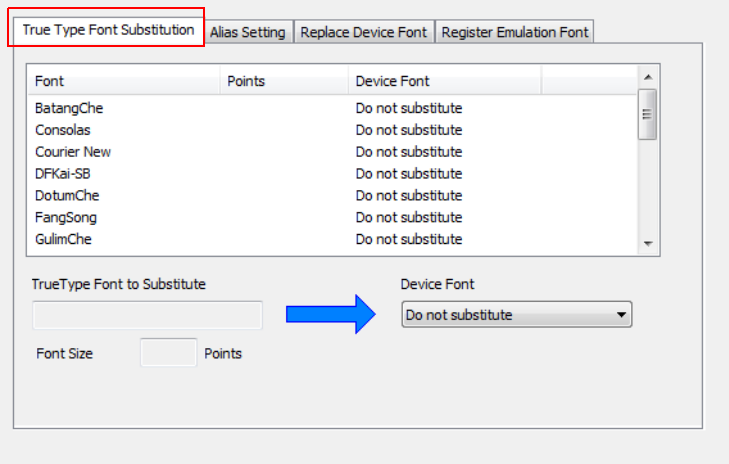
Follow the steps below.

1 Launch the APD5 Utility.

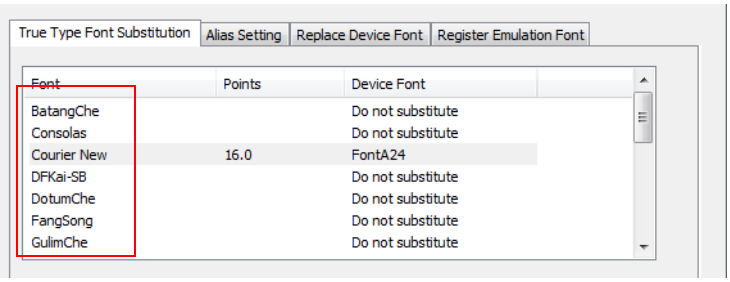
2 Select (Font Replacement).

3 Select (True Type Substitution) tab.

Registered TrueType fonts list is displayed.

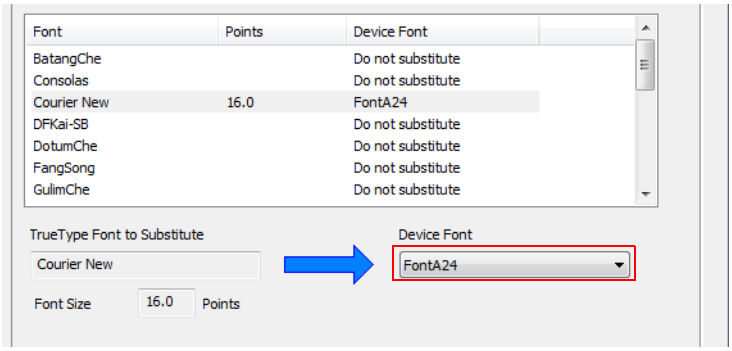


4 Select a TrueType font to be replaced from the list.



> ⚠ The original TrueType font can print only the replaced font. So, select a TrueType font that is not used elsewhere.

5 Specify the device font to be replaced from the (Device Font) pull down list.

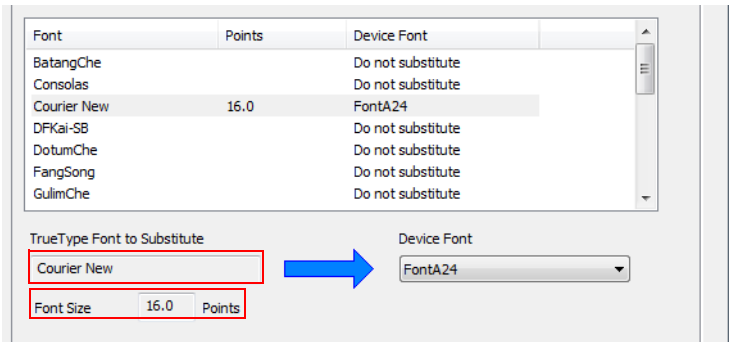


6 Click (Set).
Now the font is replaced.

Printing

1 Input the print data of an application. Set the followings on the print data.

Item	Setting Value
Font	TrueType font to be replaced that is set in the device font (It can be confirmed from the following screen of the APD5 Utility)
Point	Point displayed in the setting screen of device font (It can be confirmed from the following screen of the APD5 Utility)
Language	Western



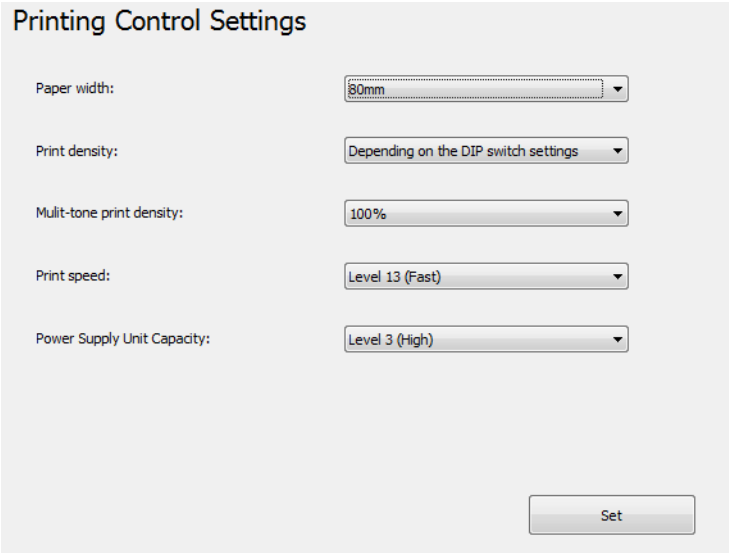
If any point besides above [Font Size] is specified, correct printing results may not be obtained.

2 Print after the settings are done.

Printing Control Settings

Setup the printing control to the printer. Follow the steps below.

1. Launch the APD5 Utility.
2. Select (Printing Control).
3. Setup printing controls.



Configure the following.

Setting	Description
Paper width	Selects the paper width.
Paper width - Number of columns	Selects the paper width and number of columns.
Logo 180 dpi Emulation Mode	Enables or disables (Logo 180 dpi Emulation Mode). (Logo 180 dpi Emulation Mode) allows you to print logos created for 180dpi printers on the same position and in the size when using TM-T82. However, (Storing Logos), allows you to freely adjust the size of logos when adding/editing them. So it is recommended to use (Storing Logos) when adjusting the size of logos.
Print density	Selects the printing density.
Multi-tone density	Selects the multi-tone printing density.
Print speed	Selects the printing speed of a printer.

Setting	Description
Roll Paper near-end sensor	Enables or disables the Near-end sensor.
Power Supply Unit Capacity	Selects the power supply unit capacity level of connected printer.
Memory Switch Settings	The "Memory Switch Settings" window is displayed. For details about the settings, see the "Advanced Printer Driver Ver. 5 Printer Specification" for your printer.

The items displayed will vary according to printer model.

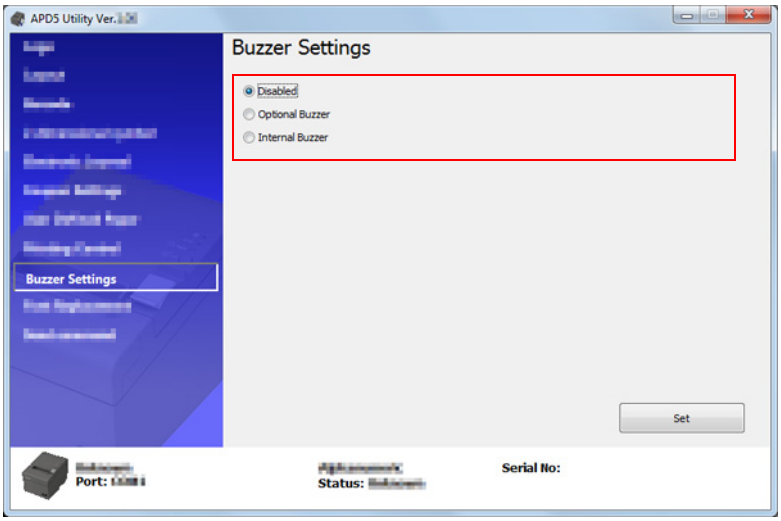
4 Click (Set). The settings are reflected to the printer.

Buzzer Settings

Allows you to configure whether the buzzer is used and the buzzer pattern settings. Configure as follows.

> [Buzzer Settings] is not supported for some models.

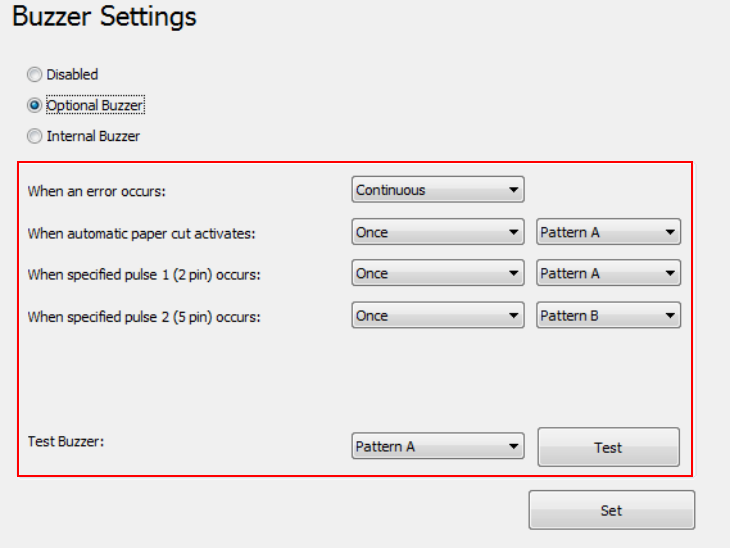
1. Launch the APD5 Utility.
2. Click the (Buzzer Settings).
3. Select whether or not the buzzer is used.



Disable Buzzer	Do not use the buzzer. Select (Disabled) and go to step 6.
Optional Buzzer	Use the external buzzer. Go to step 4.
Internal Buzzer	Use the internal buzzer. Go to step 5.

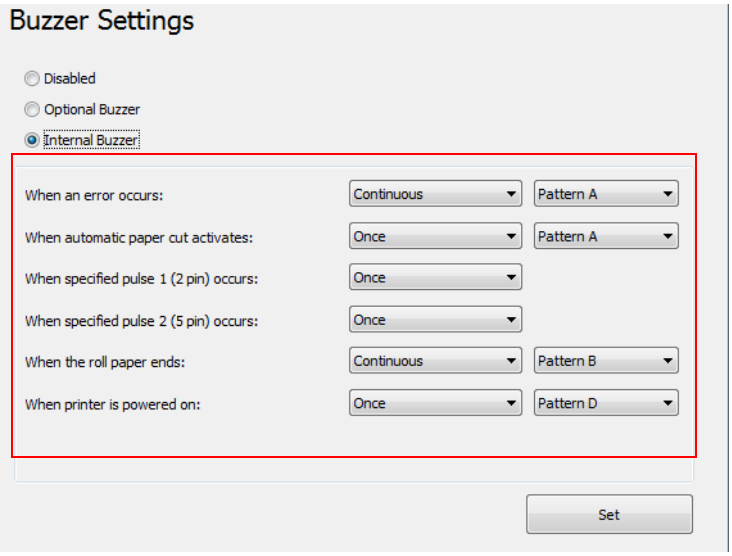
> The items displayed will vary according to printer model.

4 Specify when the external buzzer sounds and the buzzer pattern.
Go to step 6.



Setting	Description
When an error occurs:	Configure the buzzer setting when an error occurs.
When automatic paper cut activates:	Configure the buzzer setting when automatic paper cutting takes place.
When specified pulse 1 (2 pin) occurs:	Configure the buzzer setting when the specified pulse is generated.
When specified pulse 2 (5 pin) occurs:	Configure the buzzer setting when the specified pulse is generated.
Test Buzzer	Test the buzzer. Select a sound pattern. To test the buzzer sound, click the (Test) button.

5 Specify when the internal buzzer sounds and the buzzer pattern.
GO to step 6



Setting	Description
When an error occurs:	Configure the buzzer setting when an error occurs.
When automatic paper cut activates:	Configure the buzzer setting when automatic paper cutting takes place.
When specified pulse 1 (2 pin) occurs:	Configure the buzzer setting when the specified pulse is generated.
When specified pulse 2 (5 pin) occurs:	Configure the buzzer setting when the specified pulse is generated.
When the roll paper ends	Configure the buzzer setting when there is no paper.
When printer is powered on	Configure the buzzer setting when the printer's power is turned on.

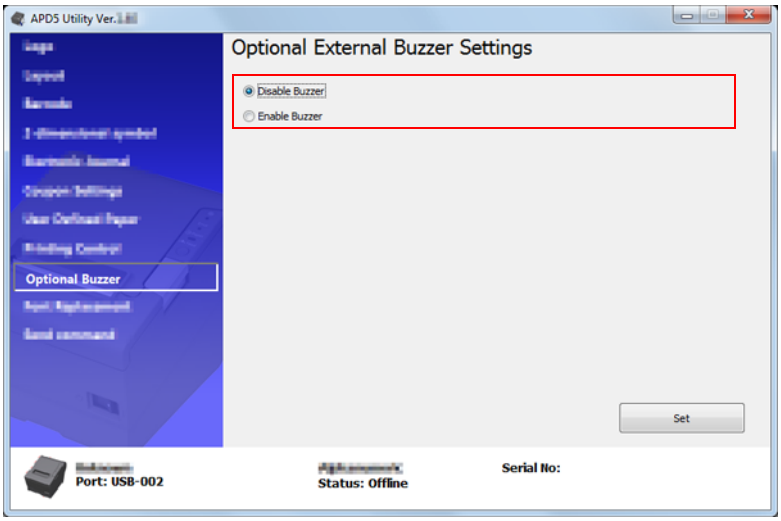
6 Click (Set). The settings are reflected to the printer.

Optional Buzzer

Allows you to configure whether an optional external buzzer is used and the buzzer pattern settings. Configure as follows.

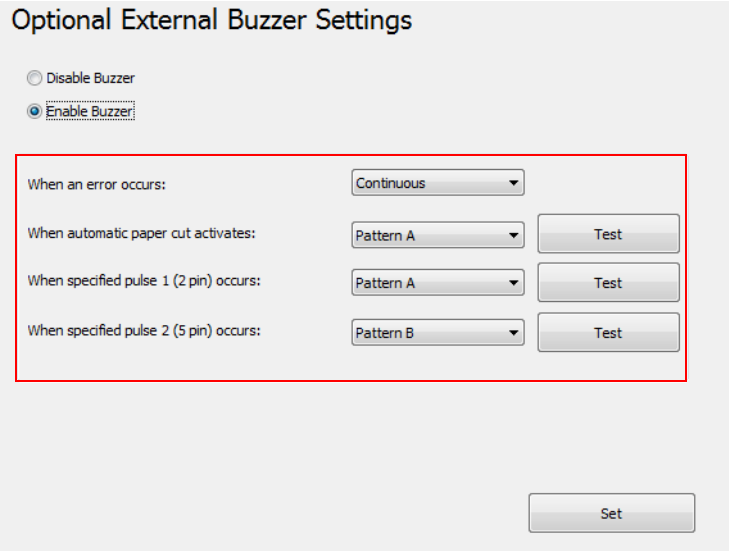
> [Optional Buzzer] is not supported for some models.

1. Launch the APD5 Utility.
2. Click the (Optional Buzzer).
3. Select whether or not the buzzer is used.



Disable Buzzer	Do not use the buzzer. Select (Disabled) and go to step 5.
Enable Buzzer	Use the external buzzer. Go to step 4.

4 Specify when the external buzzer sounds and the buzzer pattern.
Go to step 5.



Setting	Description
When an error occurs:	Configure the buzzer setting when an error occurs.
When automatic paper cut activates:	Configure the buzzer setting when automatic paper cutting takes place.
When specified pulse 1 (2 pin) occurs:	Configure the buzzer setting when the specified pulse is generated.
When specified pulse 2 (5 pin) occurs:	Configure the buzzer setting when the specified pulse is generated.
Test Buzzer	Test the buzzer. Select a sound pattern. To test the buzzer sound, click the (Test) button.

5 Click (Set). The settings are reflected to the printer.

Other Convenient Functions

APD5 also provides following functions.

- Printing start position setting (page 84)
- Print the 80mm width layout with 58mm width (page 86)
- Alias name setting to font (page 86)
- Creation of emulation font (page 88)
- Replacing function of device font (page 90)
- Switching languages (page 92)
- Paper Saver Setting (page 93)
- Modify Number of Print Sets (page 94)

Printing start position setting

Printing start position can be modified without changing application.

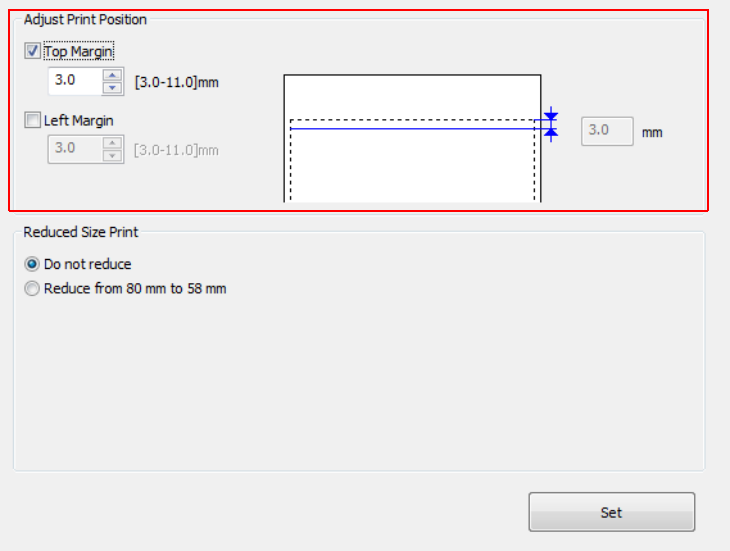
Follow the steps below to set the printing start position.

> This function is used to adjust layout by setting the margin at the printer's printing area. It cannot reduce space by setting the margin.

1 Launch the APD5 Utility.

2 Select (Layout).

3 Place a check mark on the position to change the margin and input a value.



4 Click (Set).

Print the 80mm width layout with 58mm width

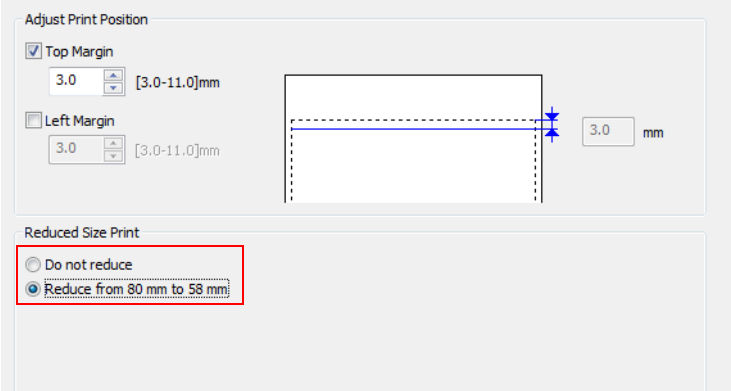
Without changing the setting, 80mm width of application print layout can be reduced and printed on 58mm width paper.

Follow the steps below to set the reduced scale printing.

1 Launch the APD5 Utility.

2 Select (Layout).

3 Check the "Do not reduce" / "Reduce from 80 mm to 58mm" check box.



4 Click (Set).

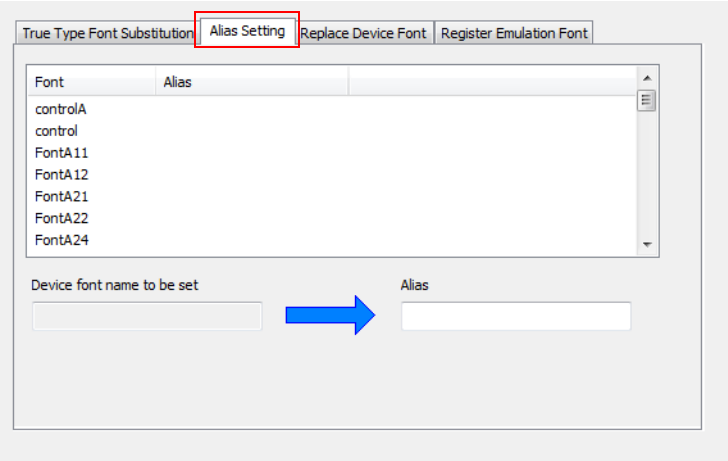
Alias Name Setting to Font

Alias name can be set for a device font. It can print with the device font without changing the font name of application.

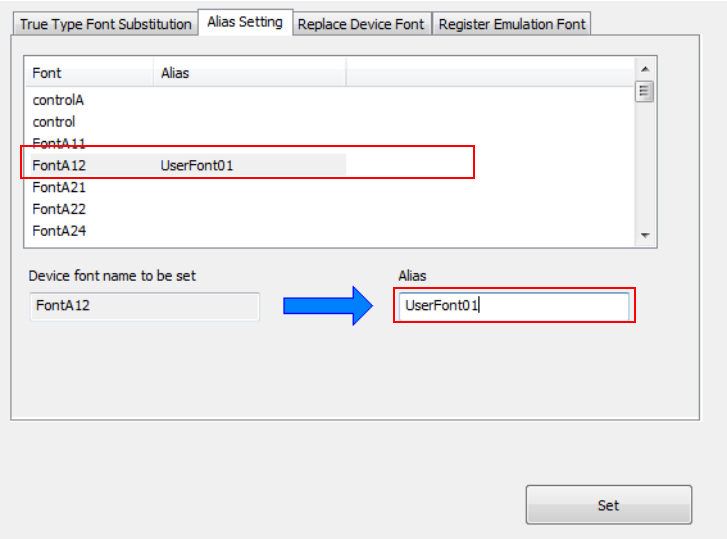
> For the barcode font and 2 dimensional symbol font, alias name can be set when registering the font.
> For detail, refer to "Barcode Font Setting" on page 38 or "2 Dimensional Symbol Font Setting" on page 44.

Follow the steps below to set an alias name.

1. Launch the APD5 Utility.
2. Select (Font Replacement).
3. Select (Alias Setting) tab.



4 Select the device font to set the alias and enter the alias name into the text box of (Alias).



5 Click (Set).

Creation of Emulation Font

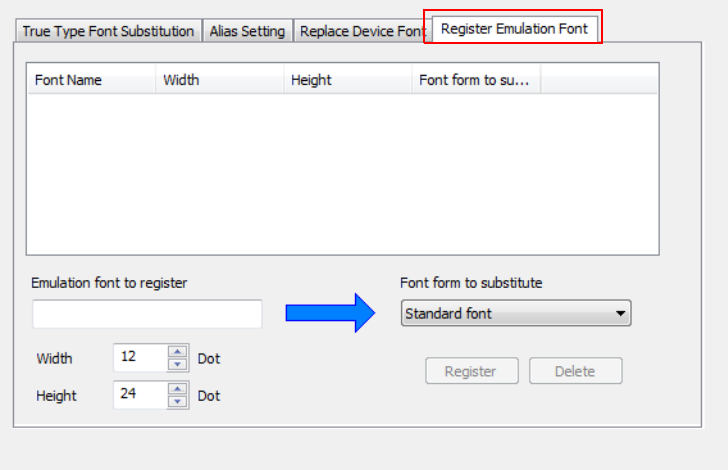
Settings are available to set font name, font size (dot unit of length and height) and font design (TrueType font). It is used when modifying font name and character size.

Follow the steps below.

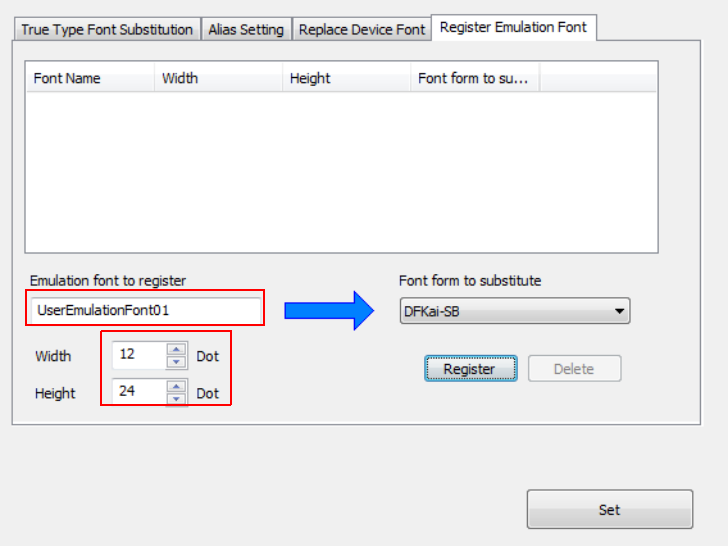
1 Launch the APD5 Utility.

2 Select (Font Replacement).

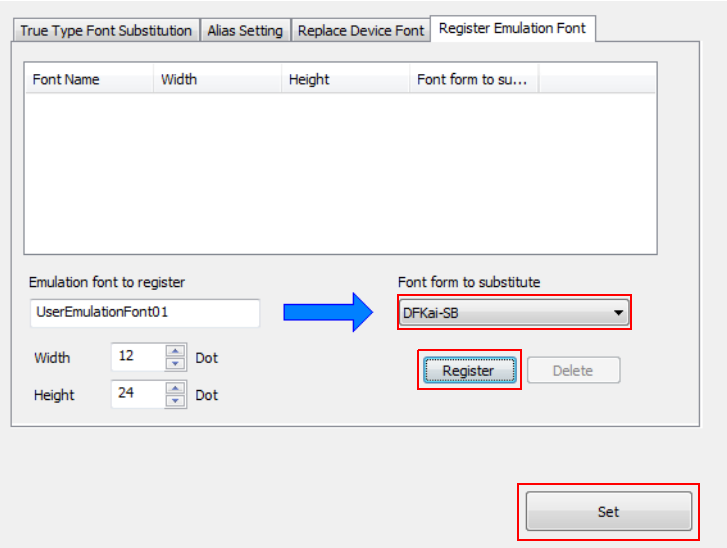
3 Select (Register Emulation Font) tab.



4 Enter a font name in the text box of (Emulation font to register) and specify size.



5 Select a TrueType font to be replaced from the pull down menu of (Font Form to substitute). Click (Register).



6 Click (Set).

Replacing Function of Device Font

The device font is replaced by a TrueFont when printing. By doing this, a character layout mismatch is minimized, because it prints by adjusting the TrueType font to the character size of device font. It is useful when printing layout does not get formatted correctly due to subtle font size differences.

Follow the steps below to replace the device font.

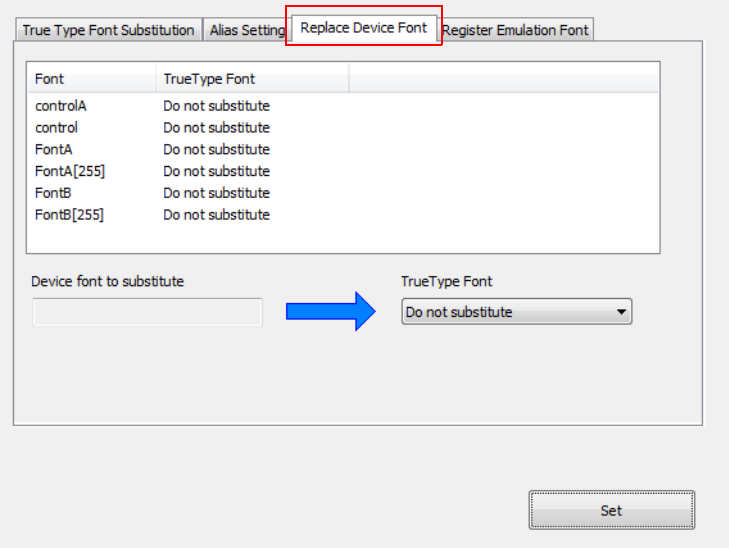
1 Launch the APD5 Utility.

2 Select (Font Replacement).

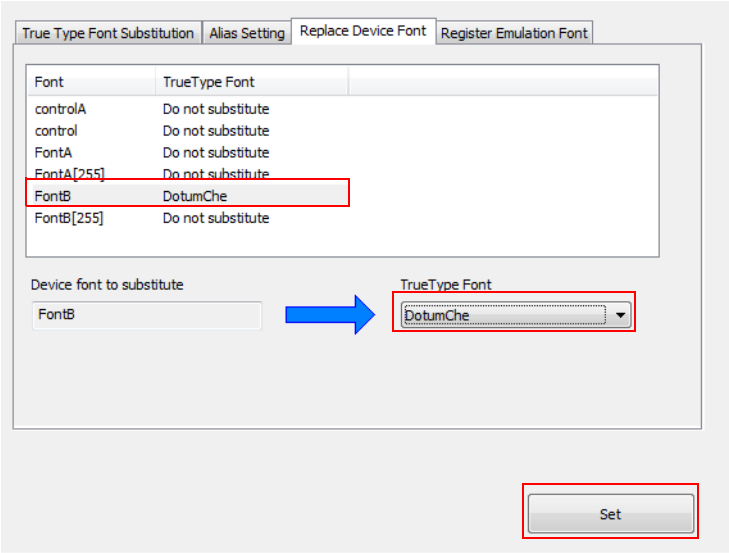
3 Select (Replace Device Font) tab.

A replaceable list of device font appears.

> In APD5, only proportional fonts are listed.



4 Select the device font from the list to be replaced. Set a TrueType font to replace from the pull down list of (TrueType Font).



5 Click (Set).

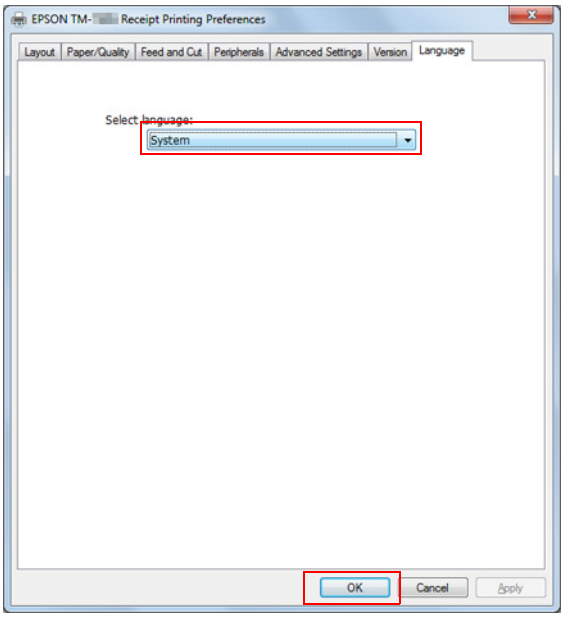
Language for displaying properties

APD5 is displayed according to the display language of OS. Follow the steps below to switch language.

1 Select (Language) tab from the print setting.

2 Select a language to be used for APD's setting screen from the pull down list of (Select Language). Click (OK) after making a selection.

> The change of display language is reflected when the print setting is launched next time.



Selectable languages are as follow.

Selectable Language			
English	Japanese	Chinese-Simplified	Chinese-HongKong
Chinese-Traditional	Croatian	Czech	Danish
Dutch	Finnish	French	German
Hungarian	Italian	Korean	Norwegian
Portuguese	Russian	Slovenian	Spanish
Swedish	Thai	Turkish	Vietnamese
System (Language setup of OS)			

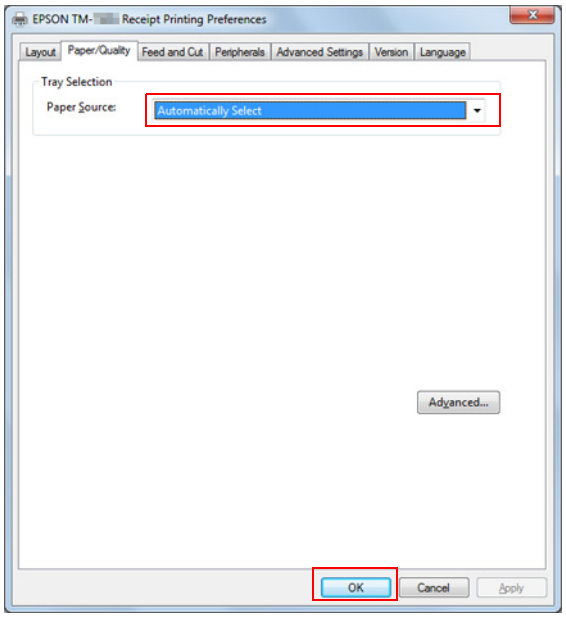
Paper Saver Setting

The amount of paper used can be reduced by eliminating the top and bottom space of receipts. By default setting, paper saver is automatically on.

Follow the steps below for setting.

1 Select (Paper/Quality) tab from Printing Preferences.

2 Select the position to reduce space from the pull down list of (Paper Source). Click (OK) after making a selection.

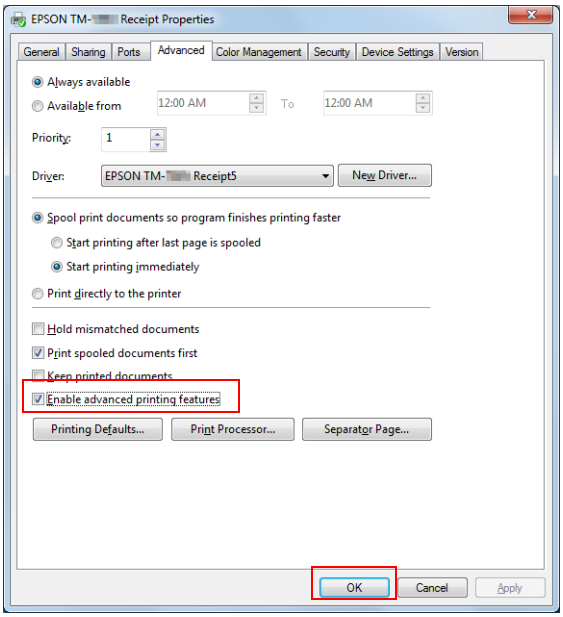


Modify Number of Print Sets

When printing a document multiple times, enable the advanced setting and change a number of print sets.

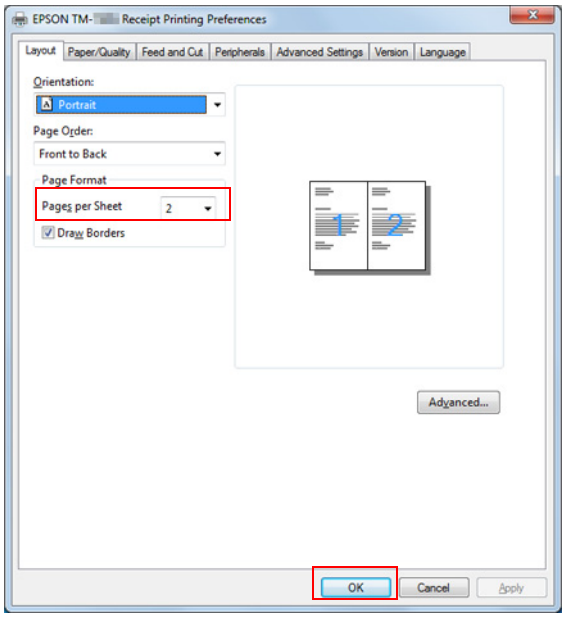
Follow the steps below for setting.

1. Select (Start)-(Devices and Printers).
2. Right click the printer and select (Printer properties).
3. Select (Advanced) tab.
4. Check (Enable advanced printing features) and click (OK).



5 Select (Layout) tab from the print setting.

6 Specify a number of print sets from (Pages per Sheet). Click (OK) when done.



Acknowledgements

"Advanced Printer Driver 5" incorporate compression code from the Info-ZIP group.

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Log Output

In this chapter, a log output destination and how to read a log file are described.

Overview

The log file is recorded by tracing between application and APD5. A log file records obtained data.

Log Files Output

Output Destination of Log File

- Windows XP:
  C:\Documents and Settings\All Users\Application Data\EPSON\devicecontrollog
- Windows 7/Vista:
  C:\ProgramData\EPSON\devicecontrollog
- Windows 8
  C:\ProgramData\epson\devicecontrollog

Log File Name

- log.txt

A log file is compressed to a zip format when its size goes over 40MB. Following records are added to a newly created log file.
The compressed zip file name is "stdZippedDateTime.zip" (e.g. std20121030160755.zip).

Viewing Log Files

A record of log files is viewed as follows.

Format

Date,time,process ID:thread ID,source hierarchy name,arbitrary message,binary data

(Output date) (Process ID:Thread ID) (Arbitrary message)

:011/07/14,15:07:14.644,00000acc:000015d8,API,-> :BiOpenMonPrinter,00000002,EPSON TM-T88V Receipt,4. 50. 0.

(Output time) (Source hierarchy name)

- Logs of arbitrary message are output in an applicable format according to the element of each log. For details, see "Arbitrary message" on page 98.
- Binary data is print data and may be omitted.

Arbitrary message

Logs of arbitrary message are output in an applicable format according to the element of each log.

Element	Description
Function call	Output when a public function of each module is called. <Format> ->,handle_value,,function_name,parameter_1,parameter_2,...
Function return	Output when a process returns from a public function of each module. <Format> <-,handle_value,return_value,function_name,parameter_1,parameter_2,...

Log output example

2013/03/01,15:07:14.644,00000acc:000015d8,API,-> :BiOpenMonPrinter,00000002,EPSON TM-T88IV Receipt,4. 50. 0. 0

2013/03/01,15:07:16.535,00000acc:000015d8,API,
<- ESDPRT001:BiOpenMonPrinter,00000002,EPSON TM-T88IV Receipt,<00000001>

2013/03/01,15:07:25.363,00000acc:000015d8,API,-> ESDPRT001:BiGetStatus,00000001,00000000

2013/03/01,15:07:25.363,00000acc:000015d8,API,<- ESDPRT001:BiGetStatus,00000001,00000004,<00000000>

2013/03/01,15:07:32.301,00000acc:000015d8,API,-> ESDPRT001:BiSetStatusBackFunction,00000001,00409130

2013/03/01,15:07:32.301,00000acc:000015d8,API,<-
ESDPRT001:BiSetStatusBackFunction,00000001,00409130,<00000000>

2013/03/01,15:07:32.301,00000acc:000015a8,API,-> ESDPRT001:CallbackStatus,00000001,00000004

2013/03/01,15:07:32.332,00000acc:000015a8,API,<-
ESDPRT001:CallbackStatus,00000001,00000004,<0000000000000000>

2013/03/01,15:07:46.333,000010c8:0000104c,SPL,
-> TmLmStartDocPort(00000001, EPSON TM-T88IV Receipt, 2, 1, {Test Page,,(null)})

2013/03/01,15:07:46.380,000010c8:0000104c,SPL,-- LM::UpdatePrinterStatus(EPSON TM-T88IV Receipt, 00000400)

2013/03/01,15:07:46.380,000010c8:0000104c,SPL,<- TmLmStartDocPort(00000001) <TRUE>

2013/03/01,15:07:48.395,000010c8:00000760,SPL,-> TmLmWritePort(00000001, 0A3A0000, 51619, 02EBF48C)

2013/03/01,15:07:48.395,000010c8:00000760,SPL,<- TmLmWritePort(00000001, 51619) <TRUE>

2013/03/01,15:07:48.395,000010c8:00000760,SPL,-> TmLmEndDocPort(00000001)

2013/03/01,15:07:48.395,000010c8:00000760,SPL,<- TmLmEndDocPort(00000001) <TRUE>

2013/03/01,15:07:50.708,000010c8:00001420,SPL,-- LM::UpdatePrinterStatus(EPSON TM-T88IV Receipt, 00000000)

2013/03/01,15:07:50.786,00000acc:000015a8,API,-> ESDPRT001:CallbackStatus,00000001,00000006

2013/03/01,15:07:50.786,00000acc:000015a8,API,<-
ESDPRT001:CallbackStatus,00000001,00000006,<0000000000000000>

2013/03/01,15:07:50.786,00000acc:000015a8,API,-> ESDPRT001:CallbackStatus,00000001,00000004

2013/03/01,15:07:50.786,00000acc:000015a8,API,<-
ESDPRT001:CallbackStatus,00000001,00000004,<0000000000000000>

2013/03/01,15:08:12.849,00000acc:000015d8,API,-> ESDPRT001:BiCancelStatusBack,00000001

2013/03/01,15:08:12.849,00000acc:000015d8,API,<- ESDPRT001:BiCancelStatusBack,00000001,<00000000>

Restrictions

This chapter describes the restrictions that apply to the APD.

OS Settings

1. When connecting Windows 7/ Vista/ XP to a printer using serial I/F, printing may not operate correctly depending on the computer and printer combination. In such cases, disable FIFO in the Windows COM port detailed settings.
2. With a serial connection, when the OS recovers from a sleep or hibernate status, the printer may print "??."
3. With some computers, if the ECP mode is set for the parallel operation mode, printing may not operate correctly or Status API may become unavailable. In such cases, clear the ECP mode setting in the computer BIOS setting.
4. With Windows 7/ Vista/ XP, use [Enable advanced printing features] (EMF spool) in the printer driver Properties - [Advanced] tab set to ON. Setting otherwise (RAW spool) applies the following restrictions to the GDI functions:
   - Raster operation cannot be printed as specified by StrtchBlt()/BitBlt().
   - When transferring bit information from display device context to the printer device context using StretchBlt(), the GDI function returns "Failure" and prevents the driver from printing.
5. When printing multiple pages, if you change the paper orientation from one page to another and/or other settings using ResetDC(), the print result may be incorrect. In such cases, set RAW spool (with Windows XP/Vista, set [Enable advanced printing features] to OFF) although some restrictions apply. See the previous paragraph for the restrictions.
6. When printing a device font in Microsoft Word, the following setting is necessary.
   - For Word 2003 or earlier:
     From [Tools] - [Options] - [Compatibility], select "Microsoft Word 6.0/95" in [Recommended Options for] or make a check in "Use printer metrics to lay out document" in [Options].
   - For Word 2007:
     From [Word Options] - [Advanced] - [Compatibility Options for], select "Microsoft Word 6.0/95" or "Custom" in [Lay out this document as if created in], and make a check in "Use printer metrics to lay out document" in [Layout Options].
   - For Word 2010:
     From [File] - [Options] - [Advanced] - [Compatibility Options for], select "Microsoft Word 6.0/95" or "Custom" in [Lay out this document as if created in], and make a check in "Use printer metrics to lay out document" in [Layout Options].

7. If you print more than one Excel sheet at the same time when different print settings are set for each sheet, the setting for the last sheet is effective.

8. When printing with Microsoft ACCESS, the text in the print result may be misaligned or align left may not be possible.

9. Operation in a Windows XP multi-user environment is not guaranteed.

10. When creating multiple queues and executing printing on one printer, make sure not to use a Microsoft standard USB port and the ESDPRT port simultaneously.

11. Refer to the table below for the coexistence of APD5 and OPOS drivers.

	OPOS 2.67 or earlier	OPOS 2.68 or later
APD 5.00 or later	-	✓

12. Refer to the table below for the coexistence of APD5 and APD4.

	APD4.53 or earlier	APD4.54 or later
APD 5.00 or later	-	✓

13. If printing is performed with the driver switched when the TM printer with the serial interface coexists with OPOS, restarting the TM printer may be demanded. In this case, change the port settings of the printer driver and change Busy Condition. (For details, see "Changing the port settings of the printer driver" in "Install Manual".)

Restrictions in the environment where redirected from a server (Environment such as Terminal Service and the remote desktop)

1. When printing a device font with some applications, the characters may not be printed completely since the print position setting may be changed. and character may not printed.

2. Functions to print by sending the print data directly to the printer, such as WritePrinter cannot be used.

3. The properties for the printer driver cannot be set. Setting for the server reflects in that for the properties.

4. The utilities in the [Utility] tab in the properties of the printer driver cannot be used.

5. Help for the printer driver is not displayed.

6. If [Substitute All] is executed by selecting the [Printer Settings] tab - [TrueType Font Substitution] - [Advanced settings] - [TrueType Font Substitution] settings under the terminal service environment, the print result may get garbled. In such a case, replace the fonts individually or print it as a graphic.

Printing

1. Print data outside of the printable area will not be printed.
2. When printing on receipt paper, blank space appears at the top of the paper which is greater than the top margin setting value. This is caused by the fact that the paper cutting position (autocutter) and the printing position (printer head) are separated and the distance between them results in extra margin.
3. Device fonts cannot be used in rotated, condensed or enlarged printing. Use Windows fonts.
4. If a device font and graphics data (Windows font or ruled line, etc.) are defined on the same line, the print result may be misaligned.
5. Printing takes longer with serial models than with other interfaces. If you want to print faster, other than a serial model is recommended.
6. With some TM printers using parallel connection, if the printer is turned on with the paper at near end position, a "no paper" error that prevents printing may occur. In such cases, after installing new paper, turn off the power, then turn it on again.
7. The paper size displayed in the printer driver Properties - [General] tab may differ from what is stated in the "Printer Specification." In such cases, select the paper size stated in the user's manual.
8. With Windows 7/ Vista/ XP, printing of codes 80H, 8EH, or 9EH from an application when device Font A or B, or blank page Font A or B (254 or 255) is specified may not operate correctly.
9. Align center or left using Control Font cannot be used with graphics printing.
10. [Separator Page] in the printer driver Properties - [Advanced] tab is not available.
11. With some applications, several device font size options are displayed, however, device font is always printed in a fixed size regardless of your size selection.
12. With some applications, print settings such as "Collate" and "Orientation" configured on the application side may differ from the printer driver settings. In such cases, the settings on the application side take priority. However, it is not possible to print beyond the printer's capabilities. (For example, printing in landscape format using device font)
13. Even when you specify italic font settings, it will not be reflected in the printings.
14. The color format is fixed to 24 BPP. So check that dmColor setting for Devmode is set to "Color" on the application side.
15. When you print a narrow width Barcode with a high-resolution printer, all of the HRI characters may not be printed. In such case, specify narrow width fonts; FontB/C for the HRI characters.

16. If you manually remove printed paper when the paper source selection is set to [No Eject] with the slip driver, the following printing will not be performed correctly.
In that case, turn off the power of the printer, and then turn it on again.

17. If you print color logos with a printer that does not support color printing of slip/validation/ endorsement and so on, only the black parts will be printed.

18. When you print a font of GB18030, please select True Type Font and make the printing data (e.g. Microsoft Word, WordPad etc). And open the printer property of printer driver, set the font from True Type Font to the font of GB18030 (Chinese 18030). Because Microsoft does not support GB18030.

Printer model information

1. In the printer DIP switches, configure the Busy condition only for the receive buffer full.
2. The printers which can be changed to the USB Class such as TM-T88V, Status API cannot be used if the port is specified to the OS's standard port (USBxxx and such). When using the Status API, specify Epson Port Driver (ESDPRTxxx) to the port.